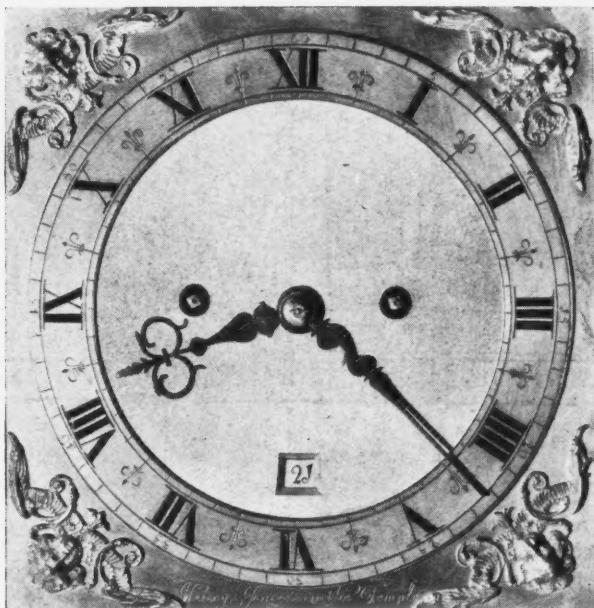


THE ARCHITECTURAL REVIEW

A Magazine of Architecture & Decoration —



BY HENRY JONES

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Vol. LXXII

December 1932

No. 433

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A D U C A L M A N S I O N

This painting by Algernon Newton shows Bourdon House, Mayfair, London. The house was one of the first buildings to be erected on the Mayfair estate when it was acquired by the Grosvenor family in 1677. The architect is unknown but the house was built, according to Mr. Avray Tipping, from 1721-1725. The exterior is a typical example of early Georgian domestic architecture in London and so unassuming and well proportioned to the street is the building that, even today, when more blatant examples of Edwardian architecture surround it, the façade scarcely looks like that of a detached residence. The original entrance and chief façade was on the south front which is hidden to the left of the plane tree in the picture ; and the Davies Street entrance shown here was undoubtedly a side one.

The interior contains much fine joinery, panelling and furniture contemporary with the house which show that if it was not built by Archer, Gibbs, or Hawksmoor, who were the great London architects of the time, it was at least by a competent follower of their tradition. It is now the residence of His Grace the Duke of Westminster, by whose kind permission this illustration is reproduced.

PLATE i

December 1932



Sir Mervyn Macartney

By William G. Newton

AT the end of October died Sir Mervyn Macartney: an architect whose opportunities were hardly commensurate with his abilities: an original member of the editorial committee of this REVIEW, and for fourteen years its sole editor; and surveyor to the fabric of St. Paul's Cathedral for twenty-five years. He was in his seventy-ninth year, and may be said to have had a long life, but it was the expectation as well as the hope of his friends that he had before him a long period of studious leisure when he retired from the surveyorship a year ago.

With Mervyn Macartney passes the last of the original band of Norman Shaw's young men. First went Gerald Horsley, and ten years ago my father died. It is only within the last year that Lethaby, Edward Prior, and now Macartney have gone. In their life and their work in all their various ways they were very different. But it may certainly be said that each seemed to have inherited from their master that very likeable quality of taking delight in the human intercourse with builders and craftsmen and all the ordinary humble men whom it is the architect's privilege to meet as he goes about his works. Macartney with his dry twinkle often recalled to one's mind Shaw's reserved humour, but his was an Irish version of a Scots original. Though his last years, when he all but lost the use of his legs, might have made a certain moroseness excusable enough, he never lost his twinkle, or made any complaint; and would make a point of being present at meetings of old friends with all the zest of his younger days.

At one time he had a considerable architectural practice, but his illness and long stay in Colorado in the early years of the present century undoubtedly interfered with his work at a time when the larger country-house was still being built; and he is likely to be best known to posterity for his enthusiastic and long continued labours to bring to the notice of both architects and the cultured public generally the rich heritage of the eighteenth century.

In the field of architectural illustration, we of today are particularly beholden, as I have written elsewhere, to his abiding enthusiasm for old English work, and especially for the work of that period which shares with Tudor building a character and a flavour peculiarly and gratefully national: the period of Wren and the generation of his immediate successors. At the time when he was riding his bicycle all over England in search of examples great and small, it was by no means a generally admired period. Even architects were ready then to hear without protest depreciations of work which is so sane and straight-

forward that it seemed lacking in character to a generation which was dallying with the quaintness of Flanders or even the licence of the baroque, as some compensation for the vanished romance of the Gothic Revival. We continually, and perhaps naturally, forget our debt to pioneers. The works they do, or the causes they champion, are at first strange, then accepted, and soon fall behind and are looked back upon as old-fashioned. But anyone who has a real sense of continuity will honour those who first cut the steps, which now, it may be, we think far enough behind us. The wealth of illustration in "Belcher and Macartney"¹ reinforced Sir Reginald Blomfield's championship of the then disregarded Georgian period.

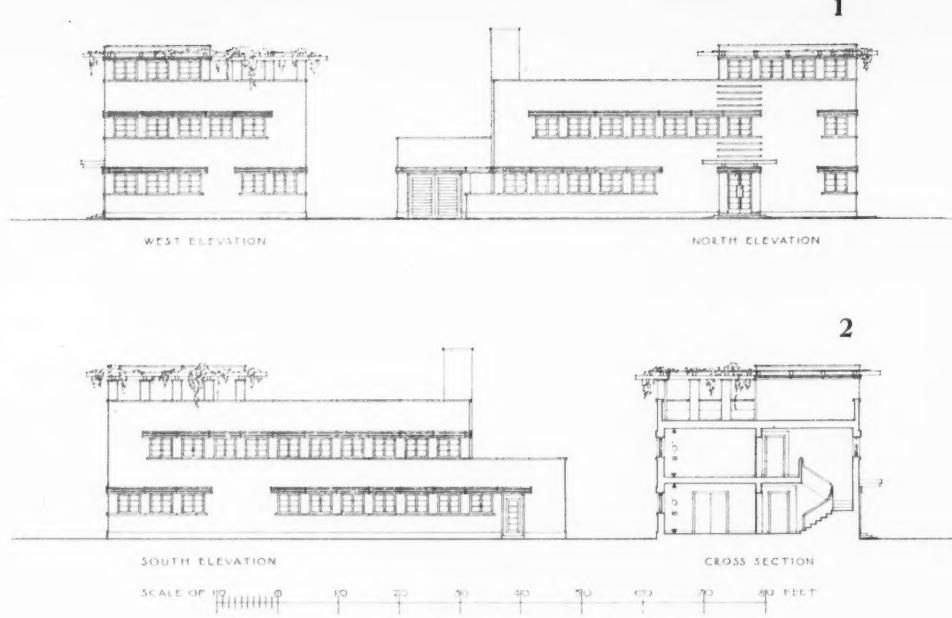
Anxious that the influence of old work should spread more widely and reach readers who might not be willing to buy a number of large volumes devoted to architectural illustration, Macartney began the series which came to be called *The Practical Exemplar of Architecture*, in which, grouped under various headings, examples of ways of doing things—a cupola, a door, a chimney-stack, a staircase—were illustrated by excellent measured drawings and also by photographs, a most fruitful source for the serious student of architecture. Here was suggestion and inspiration, not merely to use the plates, but to go out and study in a similar way. His idea has had the flattery of widespread imitation, both in this country and in the United States. For its success it needed enthusiasm, a wide knowledge of buildings in all parts of the country, and the ability to inspire a band of youthful draughtsmen with his own ideals of quality and skill. The great value of the series, and its far-reaching success, are a proof of his pre-
vision and ability.

A tribute has already been paid in these pages to his work as editor of this REVIEW,² a post where he succeeded the original committee of management, which was found too cumbrous, and which he occupied with distinction for fourteen years, including the disturbed years of war. He also had the very real satisfaction of being intimately associated, as surveyor, with Wren's great cathedral, which, after some critical years, was made safe during his term of office.

Robust of frame, ruddy, and reserved, with a smile not far away, Macartney was no fanatical adherent of creed or theory; but it was a sober pleasure to him to have devoted so large a share of his time and his abilities to the work of the great master architect of the English Renaissance.

¹ Belcher and Macartney's *Later Renaissance Architecture in England*.

² THE ARCHITECTURAL REVIEW, April 1931.

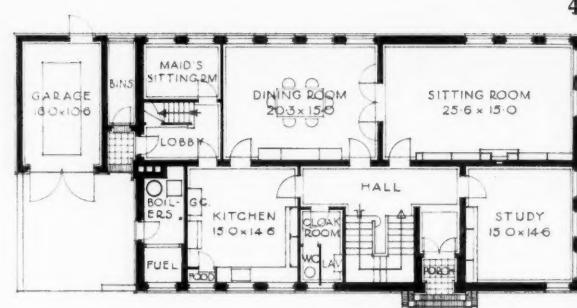


THE disposition of the windows ensures plentiful sunshine and air, uniformly distributed lighting and variety of outlook in the rooms. The lintel construction employed is emphasized as part of the design. The walls are built of 14 in. brickwork and Coleford multicoloured facing bricks are laid with $\frac{1}{2}$ in. flush joints. The lintels, sills and copings are reinforced cast stone, Bath stone colour, rough in texture and finished with a tooled surface. The windows have wooden frames and casements painted white and glazed with crown glass. 1 and 2, Elevations and cross section. 3. The north (entrance) front. 4. Plans of the ground- and first-floors and of the roof garden.



A HOUSE AT CAMBRIDGE

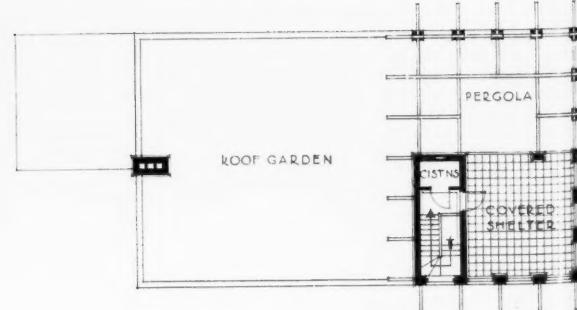
DESIGNED BY
MARSHALL SISSON



GROUND FLOOR PLAN



FIRST FLOOR PLAN



ROOF PLAN

SCALE 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65



A HOUSE AT CAMBRIDGE

This house differs from most "modernistic" buildings in that traditional domestic construction and materials are employed. It thus demonstrates that a "modern" architectural style is not dependent on, though it may be influenced by, the use of particular materials and new methods of construction, but has an emotional basis. The building is conceived as an organic whole, all parts being inter-related. The design is asymmetrical and directional in a horizontal sense, the composition of the elevations showing balance without symmetry. The plan is set out on standard units of 5 ft. 3 in. to simplify construction and give homogeneity to the design. Although the building is rigidly disciplined and systematised it is not mechanistic. Owing to standardization and compact planning, the cost per cubic foot was considerably less than for other houses with similar accommodation and equipment. The illustration is of the south front from the garden.

PLATE ii

December 1932

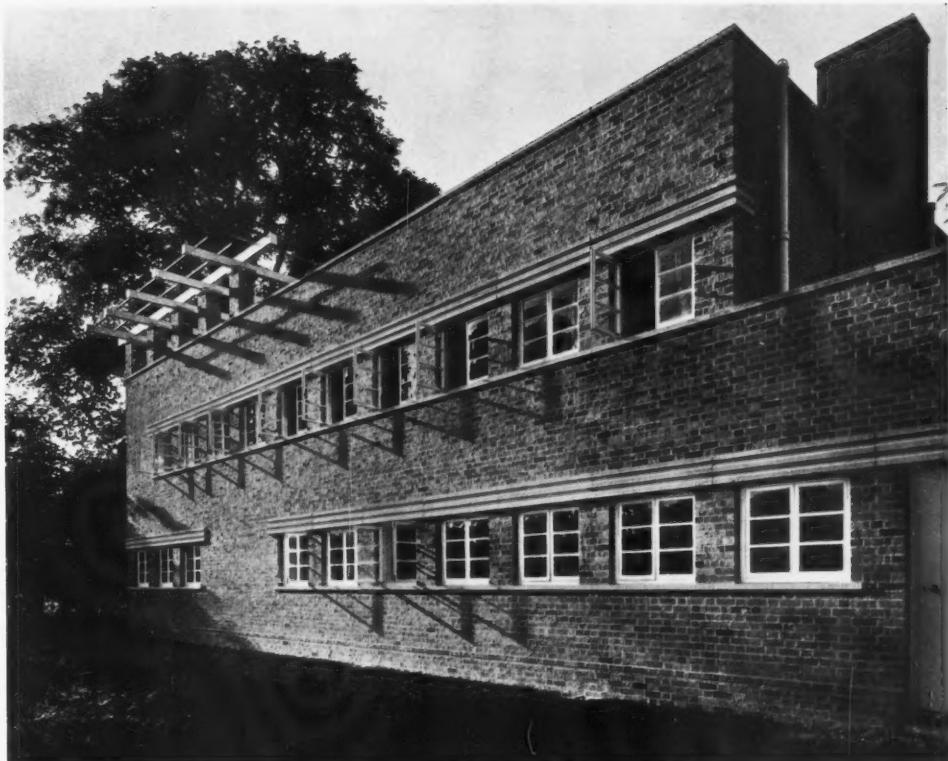


A HOUSE AT CAMBRIDGE

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A HOUSE AT
CAMBRIDGE

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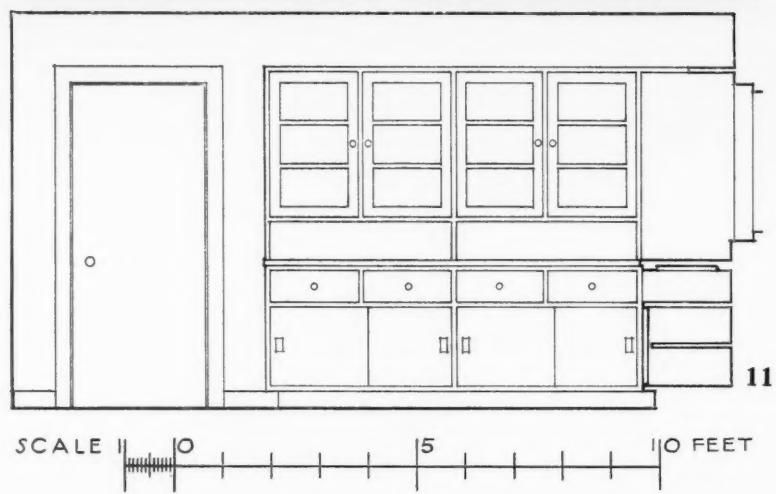


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The walls and ceiling of the sitting room, 8, are distempered pale buff. The woodwork is painted ivory white. The floor is Tasmanian oak, wax-polished. The gas fire is in stainless steel, with San Stefano marble surround and hearth, and is incorporated in the book shelves. The dining room looking from sitting room through folding doors is illustrated in 9. 10 and 11 show the kitchen and its fittings. The walls, ceiling and fittings are enamelled ivory white.



THE NEGLECTED ART OF THE PARGETER

BY NATHANIEL LLOYD

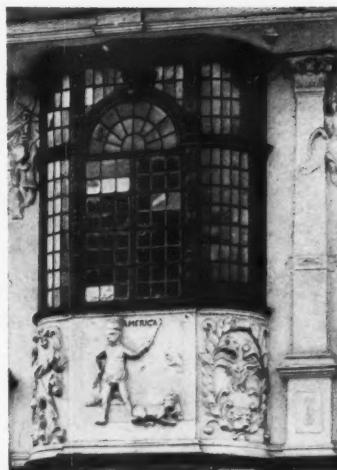
IN many English counties medieval houses were built of timber; in those where stone was scarce most houses were of timber. In other districts where there was stone, some houses were constructed of oak, probably because it was plentiful, and also because carpenters' labour may have been available. Such buildings had the spaces (panels) between the timber filled with plaster. In early work this plaster was applied on hazel sticks wedged between the timbers, but later, on laths nailed to fillets. The plaster was composed of loam, mixed with about half its bulk of reed, both leaf and stem of which were used. Such plaster was known as raddle and daub, wattle and daub or pug. It dried hard, was tough and only crumbled when removed from its panel. Notwithstanding these good qualities walls of timber and plaster were draughty and leaky, because the materials were shrunk by the sun and swelled in wet weather. The sixteenth century was the great period of adapting and reconditioning houses. In the early years of that century hall houses had floors put into the halls, and these were partitioned to provide separate chambers for which there was demand in place of promiscuous huddling of sexes in the hall. No doubt, at the same time, steps were taken to render walls weatherproof, but it is towards the end of the seventeenth century and in the eighteenth century that we find houses cased in brick or the walls covered with wall-tiling, weatherboarding, roughcast, plaster, and other devices to repel wind and wet. All these expedients produced pleasing exteriors and improved by weathering, but perhaps the most interesting and attractive of them was pargeting. Before describing forms of this it may be well to try to clear up some confusion which exists regarding the nature of the art.

During the medieval period, plasterers were frequently called pargeters, but their work bears no resemblance to the decorative work to which the term pargeting has long been applied.

1, 2, 3. SPAROWE'S HOUSE, IPSWICH.—Part of the long street front of 70 feet. 1 is a late seventeenth-century facing of an Elizabethan house, the oak and pargeting being contemporary. The pargeting is original, but was restored about the middle of the nineteenth century. The oriel window 2 is contemporary with the original pargeting. The centre panel below has a figure presumably an allegorical representation of America. The side panels have decorative floral cartouches. In 3 a pictorial representation is shown of a man and woman in a chariot; on the right a man is hiding in the branches of an oak tree. The whole of this work is crude. 4. SIBTON, SUFFOLK.—The groups of four Tudor Roses, with a mask in the centre, are sometimes termed Butter Pat pargeting. They are formed by impressing moulds upon the plaster when soft. The string-course, which actually follows the face of a structural beam, is a decoration which might be applied to modern work without imitating the wavy line which is the result of settlement.



1



2



3



4

THE NEGLECTED ART OF



5



6



7



8

1243-4. *Liberate Roll, 28 Hy. III*, where the tower of Corfe Castle is to be "pargeted" with mortar where needful and the whole to be whitewashed externally.

The pargeting refers to filling fissures in the walls.

Pointing, in medieval language, meant the simulation of ashlar jointing, as in the illustrations from Colchester and Trotterscliffe, 14 and 15.

1396. "Item pro carecta calcis pro parchetting vjs, vijd."

Evidently lime for plastering.

1565. "To parget or to roughcast."

Here the words are used synonymously.

1588. "INCRUSTATIO—A laying over, a pargetting . . . a roughcasting."

Again roughcasting and pargeting are synonymous.

1519. "Some men wyll haue theyr wallys plastered, some pargetted . . . some rougue caste."

Here the terms are distinct, but no indication as to the distinction.

1538. "The playstryng or pariettyng of a house."

Again synonymous.

1592-3. "BOTTON: Some man or other must present wall, and let him have some plaster or some loam, or some roughcast about him, to signify wall . . ."

Although no reference is made to pargeting, the materials named (especially loam) are significant.

No early quotation refers to pargeting in its ornamental sense, other than as plaster upon which paintings are to be made, but in—

1606 we have "All the Parget carvd and branched trim With Flowrs and Fruits and winged Cherubim."

5. Pargeting decorated with fruit and foliage in relief at COLNFORD HOUSE, EARLS COLNE, ESSEX. In the centre of the panel is a cartouche bearing the date 1685, and initials ^T C.E. 6. CROWN HOUSE, NEWPORT, ESSEX (c. 1692).—In country places, "tradesmen's architecture" persisted at this time, and many charming details may still be found. In Eastern counties, the practice of pargeting was employed to protect timber-framed walls from the rain. Usually the wall surfaces were divided into panels, which might be decorated with fruit, flowers, or foliage in relief, as can be seen in this illustration, or simply combed with repetitive patterns as shown in No. 10. 7. RAMPYNDENE, BURWASH, SUSSEX (1699).—The decorations of the semicircular cove, the soffit of the hood, and the panels over the door, are of plaster. 8. HOUSE AT CLARE, SUFFOLK.—A fifteenth-century building, the walls of which were pargeted towards the end of the seventeenth century, in a floral pattern. The fifteenth-century barge boards, oriel windows, and the doorhead are in fair preservation.

The wall surface of the eighteenth-century pargeting at

F THE PARGETER

Contemporary descriptions, *temp. Henry VIII*, of his palace of Nonsuch record the external panels of plaster, enriched with pictorial subjects in relief, but these were executed by Italian artists in stucco and, with the departure of these men, the art appears to have ceased to be practised in England.

If we may judge by surviving examples and by the absence of any which date from the sixteenth and early seventeenth centuries, we may infer that pargeting in the full sense of the term was practised little and, if we may judge by the many existing examples dating from the third quarter of the seventeenth century, we may also assume that then the art suddenly became fashionable.

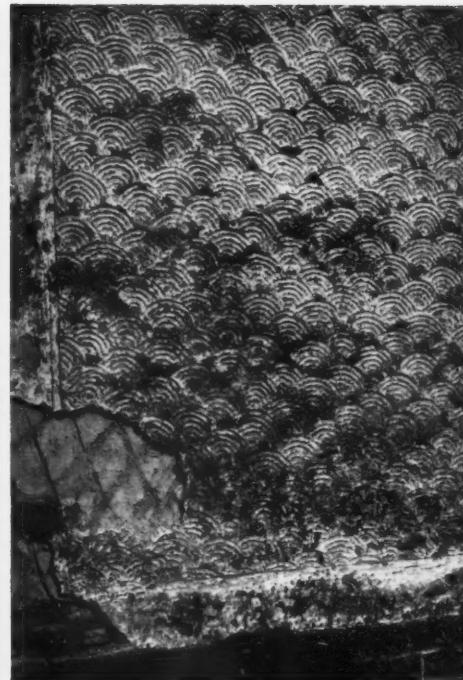
It must be remembered that all this time there existed skilled workmen who produced plaster ceilings and plaster overmantels, so that there was no lack of talent when a call came for pargeting. One strange fact is that the late seventeenth-century work burst forth like Minerva, fully equipped, and, further, that the richest work is found at this time, which suggests its having been introduced from the Low Countries after the Restoration. The materials used for pargeting vary with the counties, but loam, lime, and some binding material were the usual constituents. An essential factor was preparation long before use, which, with thorough mixing, may account for its durability.

The illustrations may be divided into four groups :—

A.—Decorative, floral or pictorial subjects in high relief, as at Ipswich 1, 2, 3, Newport 6, Clare 8, Earls Colne 5, and possibly, that at Burwash 7, though the latter is more akin to internal plaster-work. It is significant that all the examples 1 to 8 belong to the last quarter of the seventeenth century and that they are in East Anglia.

THAXTED, ESSEX, 9, is divided into panels decorated with incised chevron ornament. The framing is moulded with bead and quirks. At NEWPORT, ESSEX, 10, the eighteenth-century pargeting is applied to a timber-framed wall. The damaged corner shows the first coat scored to form a key for the second and final coat which is roughly panelled. This combing was a favourite pattern with plasterers, who used many designs of a similar character. In MODERN IMITATIONS OF OLD COMBED PATTERNS, 11, the pricked work is better than the waving, but all of them suffer from the omission of borders to the panels. The checker corbeling under the bracket is a rare and ingenious piece of carpentry. 12. NEEDHAM MARKET.—This guilloche pattern is of more recent date than examples 8, 10, but is formed with a comb and the texture produced is good. Unfortunately, the panel borders are not sufficiently strongly emphasized and, consequently, weaken the design.

This HOUSE AT SAWBRIDGEWORTH, HERTFORDSHIRE, 13, has an eighteenth-century pargeted front, divided into panels; the framing is worked with bead and quirk moulding and the surfaces of the panels are left rougher than those of the framing; the whole front is painted cream. This treatment would be applicable to modern framed houses, if the framing were covered with roofing felt before lathing.



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11



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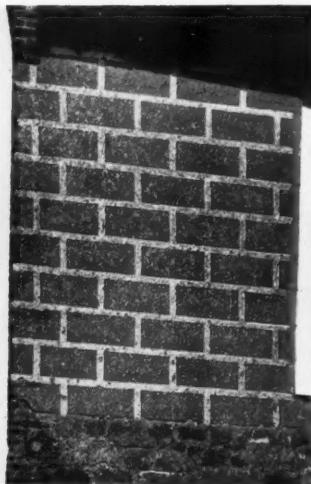
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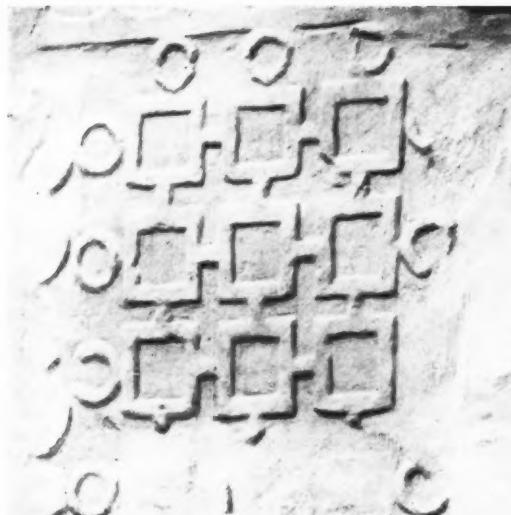
THE NEGLECTED ART OF THE PARGETER



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14. HOUSES AT COLCHESTER, ESSEX.—The pargeting of these earlier (sixteenth-century) houses is channelled to simulate masonry. Parging of old brickwork to represent stone is shown in 15, FORD PLACE, TROTTERSCLIFFE, KENT. The channels are coloured with lime to a lighter tint than the blocks, which enhances the stone-wall effect. 16 shows a geometrical pattern, applied before the final coat of plaster and removed after it was set, at a late seventeenth-century house at LAVENHAM, SUFFOLK. The example from FOUR WENTS, NEAR HAWKHURST, KENT, 17, shows the decoration of the plastered gable of the porch, coloured black and white. Although at one time such colouring was common, little of it now remains, and what is left has been frequently renewed. Such dating is interesting, but it is not to be relied upon. 18. DUKE'S PLACE, MEREWORTH, KENT.—Plasterers' decoration was not

confined to repetitive detail or to the division of wall space into panels, but extended to formal geometrical designs calling for some skill in setting out the wood templates, which were fixed in position upon the first coat of plaster and removed when the final coat had dried.



17



18

B.—Combed work, usually in panels, having a slight border. In these the pattern is scratched or impressed upon the final coat of plaster. The undercoat is exposed near a corner of the scale pattern from Newport, 10. There is considerable variety of these patterns; the scale pattern from Newport being one most in favour. Herringbone and zig-zig patterns, one of which is illustrated from Thaxted 9, are also widely distributed. This shows, also, a formal panel treatment, with which whole fronts of houses were covered.

C.—Sunk patterns, formed with templates of wood, which were fixed to the penultimate coat of plaster and only removed when the final coat had been applied. This treatment was capable of infinite variation, limited only by the number of patterns available or capable of being devised. Three examples are shown, from Sawbridgeworth, Lavenham and Mereworth 13, 16 and 18.

D.—Imitation of masonry (the "pointing" of the medieval period). The examples show application to two kinds of wall: at Colchester 14 it is upon a timber and plaster front, but at Trotterscliffe, 15, on Elizabethan brickwork.

The illustration 17, shows the plastered gable of a porch, on which a formal design in triangles has been painted in colour, with the initial E and date 1681 so rudely inserted as to suggest their being a restoration by a less skilled hand.

Revivals of pargeting have not been successful, yet the art is capable of application either as a simple or a complex treatment. Combed work has attracted the interest of many persons desirous of introducing "old world" details upon restored or new buildings. These are failures because their authors tried to make them "look old," but succeeded only in making them look precious. Trying to make work "look rough" is never satisfactory. The roughness or inaccuracies of old work arose, not from the craftsman's effort to produce such an effect, but from his use of primitive tools and because he depended more upon his own eye than upon accurate setting out. But, all the time, he was doing his best. 11 shows modern work, which is by no means the worst of its kind. Suitable combs have been made and the pricked work done with these is fairly good. The wavy work is not good, and this is particularly so in the horizontal treatment. The cardinal error, however, is the omission to provide a border to each panel, if only a simple one like that in the illustration from Newport 10. It is for lack of this that the work in 11 looks alien and out of place.

NATHANIEL LLOYD.

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The Conquest of the Machine

By JOHN GLOAG

UNTIL Sir Ernest Benn wrote *The Confessions of a Capitalist* and Henry Ford produced his first book, *My Life and Work*, there were very few books that readably recorded the creative thought and constructive work that modern commercial and industrial concerns demand in their organization and control. Ford's book appeared ten years ago, and it is seven years since *The Confessions of a Capitalist* first began its career as a best-seller.

Ford must have made every thinking person who read his book conscious that two sorts of civilization were growing up side by side in the same world, and his subsequent books must have extended that consciousness. It seemed an odd, contradictory sort of civilization, this new form of industrial life Ford talked about with such confidence in which goods were produced as rapidly and sold as cheaply as possible, and wages were forced up, so that some sweating Yank mechanic tightening nuts as a conveyor belt slid past him might earn four times as much as a hundred per cent. English gentleman could earn as a curate or a schoolmaster. Ford wrote and talked about this new world with such confidence because he had made it, and infernally disturbing it was to everyone who considered its implications.

In England, soaked in the social prejudices of the last century, the idea of poverty being eliminated is subconsciously resented. Social values that are based on caste or inherited wealth are deflated in the new world of high wages, independence, and active business brains. The depth of English dislike for that world may be measured by studying the diary of the dear old lady of Bouverie Street, Mr. Punch. Huntin', fishin' and shootin', diversified by nice fun about fairies and ladylike exclamations of surprise about the

habits of the new rich and the intellectual pretensions of the working man and the masses, make those pages restfully unreal to those who know something of the industrial scramble, and those who would preserve the old, fading, purely agricultural civilization must be fortified by their perusal.

Thousands of people must have been relieved to hear of America's depression, of the apparent collapse of Ford's new world, not because they had hate in their hearts, but because they feared change, because they found in the easy-going, unplanned English world a deep, unruffled peace, if only they practised shutting their eyes to the misery and waste perpetuated by planlessness. The social topsy-turveydom promised by America's progressive industrialists would be arrested, and the sacred laws of supply and demand (whatever they are) would continue to operate, and the equally sacred cycles of prosperity and depression (whatever they are) would alternately drench the world with fatuous confidence and frantic panic. Like mullahs of Islam, the bankers said: "It is written."

But the new world builders of America are the most determined heretics. The haphazard business traditions, developed in an age of transition from an agricultural to an industrial state, are as hampering to their ideas as the traditions of a mediæval abbot would be in a research laboratory. The aims of the new world makers, and the technique by which those aims may be realized, are set out with force and clarity by an American business man, Mr. Edward A. Filene, who has made a fortune by managing a large department store in Boston, U.S.A., and who, like Henry Ford, recognizes that the making of a personal fortune is not the final object of business. In a book

THE CONQUEST OF THE MACHINE

called *Successful Living in this Machine Age*,* Mr. Filene successfully removes all manner of untidy conventional conceptions about the object and organization of mass production. He believes that "mass production is not a mere detail of factory technique. It is a universal principle. It consists of the organization of human knowledge, under the most scientific direction, to supply the needs of the masses by the most satisfactory and most economical method in which they can be supplied."

Dr. Johnson once remarked that "the theory of trade is yet but little understood, and therefore the practice is often without real advantage to the public; but it might be carried on with more general success if its principles were better considered." That sentence from the eighteenth century summarizes Mr. Filene's complaint about the twentieth. We have never appreciated the real significance of mass production; we have always thought of it as the production in the mass of objects, rather than the scientific production of objects for the masses. In other words, we have not understood the theory of modern trade, which seems to suggest that the purchasing masses should be the arbiters of the world's destiny.

High wages, abundant purchasing power, and the production of cheap goods to tempt that purchasing power, form the benevolent circle of Mr. Filene's new industrial world. American depression came because leaders of business, bankers and politicians, who still think traditionally, encouraged the earners of high wages to invest in stocks for the financing of fresh industrial developments, instead of encouraging them to spend their money and thus keep industrial production at full output and high-wage pressure. The earner's duty of spending was neglected; he wanted to get rich quick on paper, and saved and invested instead of spending and speeding-up industry, and thereby replaced the benevolent circle by a vicious one of over-production, wage-cuts, lower purchasing power, the slowing-up of industrial output, and finally unemployment. None of it would have happened if business leadership had everywhere realized where the true path of profit lay, but even in the alert land of America this path was missed, in spite of the signposts Henry Ford had erected in nearly every business man's library.

Mr. Filene does not deal in sentimental idealism. He is a vigorous materialist, recognizing that as man is a basically selfish creature, it is good business and good for the peace and plenty of the world if that selfishness is benevolently exploited. He tells us that: "mass production, which is the most successful form of industry, is the extreme opposite of independence. It means complete dependence upon the masses—complete interdependence, and therefore the highest possible standard of living for everybody. . . . If it doesn't mean loving others as we love ourselves, it at least means thinking of others first, in our own self-interest, and serving ourselves best through serving others best. It doesn't mean unselfishness. It means simply the discovery of better and more successful

* *Successful Living in This Machine Age*, by Edward A. Filene, with a Foreword by Sir Francis Goodenough, C.B.E. London: Jonathan Cape, 7s. 6d. net.

methods of getting what we want—that is, if we want prosperity." Mr. Filene does not think that mass production can change human nature, but he believes "it is giving selfish human nature an opportunity, which could never be clearly seen before, to express its selfishness in profitable co-operation."

He is insistent on the importance of salvation through selfishness. "The great meaning of the Second Industrial Revolution is that it inaugurates intelligently selfish, actual, factual co-operation, not in accordance with some theory of what man should be, but in accordance with what man really is." One wonders whether this planned exploitation of our base weaknesses will be a source of moral strength in the world of tomorrow. Equity is one of the by-products of the mass production process. "It has only begun its revolutionary work by enlisting human selfishness for the widest possible human service. It is achieving social justice, but it cannot stop with the achievement. It will abolish unemployment because it must. It will give higher and higher wages because it selfishly must."

Mr. Filene attends in detail to many social problems. He has a chapter full of hard common sense about religion, which he thinks will again become a seven-day rather than a seventh-day practice "now that the well-being of others has become a selfish necessity for each of us. . . ."

One of the most stimulating chapters in the book is on the application of mass production principles to housing. He complains that the existing housing business "seems to get its tips, not from actual industrial evolution, but from the real estate business—the business of selling locations to masses who cannot locate." He sees the need for "a nation-wide building business, interested not in gluing families to some particular spot," not caring where its customers live, a business that "would keep in touch with industrial development and be ready with good housing at the lowest possible price" in the places to which industry would draw its customers.

Mr. Filene approaches every problem as a fact-finder, and he pleads for a world-wide indulgence in fact-finding. It is not given to everybody to bring such a judicial and calmly lucid mind to bear on the facts when once they are found. The chief fact that emerges from the book is that the new machine civilization is to be ruled by the taste and wants of the mass, of the people who represent the greatest volume of buying power. To the study of the existing and potential wants of the mass a great structure of research is in process of erection, not only in America, but all over the world.

In England, some idea of the efficiency of the research that is being done in connection with the buying habits of the public is conveyed by a book called *Retailing and the Public*,† by Lawrence E. Neal, joint managing director of Daniel Neal and Sons, Ltd. Mr. Neal has made a compact survey of methods of distributing goods, and he reveals the impressive background of organization that makes modern

† *Retailing and the Public*, by Lawrence E. Neal, with a Foreword by F. J. Marquis, M.A., B.Sc., J.P., President, Incorporated Association of Retail Distributors. London: George Allen and Unwin, Ltd., 7s. 6d. net.

scientific shopkeeping such a smoothly efficient business. The demands of the masses, those future rulers of the world, are already classified with precision. Businesses are organized and run to serve certain specialized and known types of taste. There is an acknowledgment of responsibility for the improvement of standards, and the factory technique of industrial production enables this to be shouldered by the manufacturer, presumably under encouragement from the retailer.

"Only massed standardization, owing to its enormous output, can completely justify the employment of the specialist in research, in design, and in marketing," says Mr. Neal; "and over wide areas of demand it should therefore be able to raise the general levels of taste and quality. The 'cheap and nasty' stigma will, in fact, quickly be a thing of the past once we have thought out the problem of linking simplicity and excellence of design with standardization in output; and if examples are wanted as forerunners, one may ask whether those have suffered in choice of material or texture or colour by reason of its mass production, or cannot 1932 show printed cotton materials that in their design are a delight to the eye?"

But whatever views manufacturer and retailer may hold about the improvement of design, the ultimate decision apparently rests with the public which does the buying. In the new world of mass production the wish of the greatest number is the law of the machines.

In this Press-ridden age anybody who can write readable prose may be called upon to discuss the most recondite problems of social and industrial organization. While writing enables people to put their ideas into some kind of order, the ability to write does not confer the ability to think. What is frequently labelled as "a thoughtful contribution to contemporary industrial problems," is simply a selection of prejudices and second-hand opinions dredged from the shallows of a third-rate mind and garnished with racy phrases. The people who have real experience of the industrial world are seldom articulate, and the appearance of two books written by men of business with creative minds is infinitely more important in the world today than the appearance of half a dozen novels of genius. These men know the world is changing, and they want it to change the right way. In America, those who accept their way of thinking have denounced conditions under which it could still be said: "For the poor always ye have with you. . . ." The new world builders have resolved to abolish the poor in pocket, but they are taking no precautions apparently to abolish the poor in head. What sort of life will their benevolent circle of production and consumption promote, when everyone has the refill habit, and buys an entirely new outfit of everything every three months in some of the wonderful stores created by scientific retailing? Won't it be rather like Aldous Huxley's *Brave New World*, when games, sexual and bovine, occupy the whole leisure of mass-produced man?

But will this world of the challenging American industrialists take shape? An acute critic of civilization, who has never been identified with optimism, hovers above the industrial scene, rather like the

raven in Poe's poem, and emitting similar views. "Never More!" says Herr Oswald Spengler in what he describes as "a contribution to a philosophy of life," under the title of *Man and Technics*.[†]

From Herr Spengler we learn that "the mechanization of the world has entered on a phase of highly dangerous over-tension." He also suggests that we are becoming sick of machines. Moreover, "the flight of the born leader from the Machine is beginning. Every big *entrepreneur* has occasion to observe a falling off in the intellectual qualities of his recruits." The assertion is unsupported by any facts, and the whole, humourless essay is an attempt at super-human detachment, but its author no more achieves detachment from the world than a man who ascends the Eiffel Tower: he merely gets a different viewpoint, not necessarily such a true one as he would obtain nearer the earth.

Herr Spengler insists that "man is a beast of prey." In support of this idea he furnishes us with a pregnant classification for humanity. He asks: "What is the opposite of the soul of a lion? The soul of a cow. For strength of individual soul the herbivores substitute numbers, [the herd, the common feeling and doing of masses]." Leaders, creative individualists of all kinds, might well be carnivores, and the mass, the ruling mob that will run the machine civilization by the strength of its desires, the herbivores. The sheep may be educated, but if education makes them think, they will cease to be sheep, and may disrupt this civilization that is to be built on the sand of selfishness.

From America comes the voice of confident optimism. This great civilization of mass production is only just beginning. Herr Spengler thinks it is just ending. "Only dreamers believe that there is a way out. Optimism is *cowardice*." The queer cats-cradle of boastful defiance of fate, fears and fatuities that Herr Spengler weaves into such a gloomy tangle would probably be dismissed by the exponents of enlightened American materialism as "bunk!" But couldn't that brief, dismissive term also be applied to the planned exploitation and glorification of human selfishness?

A world in which the profit motive was the dominating and acknowledged impulse of life would be very comfortable to live in, if mass production does all that is claimed for it, comfortable in the crudest sense. But "armchairs for all" can never make a great civilization, and the belief that enjoyment of the apparatus of living is the object of life may lead to the destruction of this golden machine age. Fortunately there are other alternatives to the industrial visionaries' "produce and consume" doctrine, and to Herr Spengler's Kiplingesque law of the jungle. For nearly two thousand years the Western world has been in possession of an outline of conduct for the ordering of human relationships that has never been bettered and never been tried. But the idea has such stark nobility that it has persisted, in spite of orthodoxy, codification, superstition and the cowardice and stupidity of the mass mind: possibly because it was not conceived in the temples of Mammon.

[†] *Man and Technics*, by Oswald Spengler. (Translated by C. F. Atkinson.) London: George Allen and Unwin, Ltd., 6s. net.



THE ALTAR PIECE AT ST. COLUMBA'S CHURCH
DESIGNED BY MARY ADSHEAD

The altar piece is about 3 ft. wide by 2 ft. 6 in. high, painted in a wax medium on a three-ply board mounted in ivory. The general colour scheme is tones of grey and brown, with one or two bright colours. The Madonna's dress is pale blue, her cloak vermillion. The Infant Christ reclines on a dark blue cloth. The halos are gilt, also the trappings of the red-brown horse on the right. There is a little soft green and pale lemon yellow and the robes of two of the Magi are white. The colour scheme is reminiscent of Piero della Francesca.

ST. COLUMBA'S CHURCH, LIVERPOOL

DESIGNED BY BERNARD A. MILLER

1



1. The entrance front. The 2 in. silver-grey brickwork, relieved by "spots" of Portland stone, with doors and metal window frames painted turquoise, make up the colour scheme of the walls. The roofs are finished with glazed "apple green" pantiles. 2. The sanctuary from Pinehurst Avenue. The Portland stone cross is designed in stepped formation with the foundation stone at the base, terminating with a carved chalice and rays. A low boundary wall is anticipated. 3. The rising sections of nave, central space and sanctuary. The porch gates are of wrought iron, painted aluminium on the face with turquoise reveals.



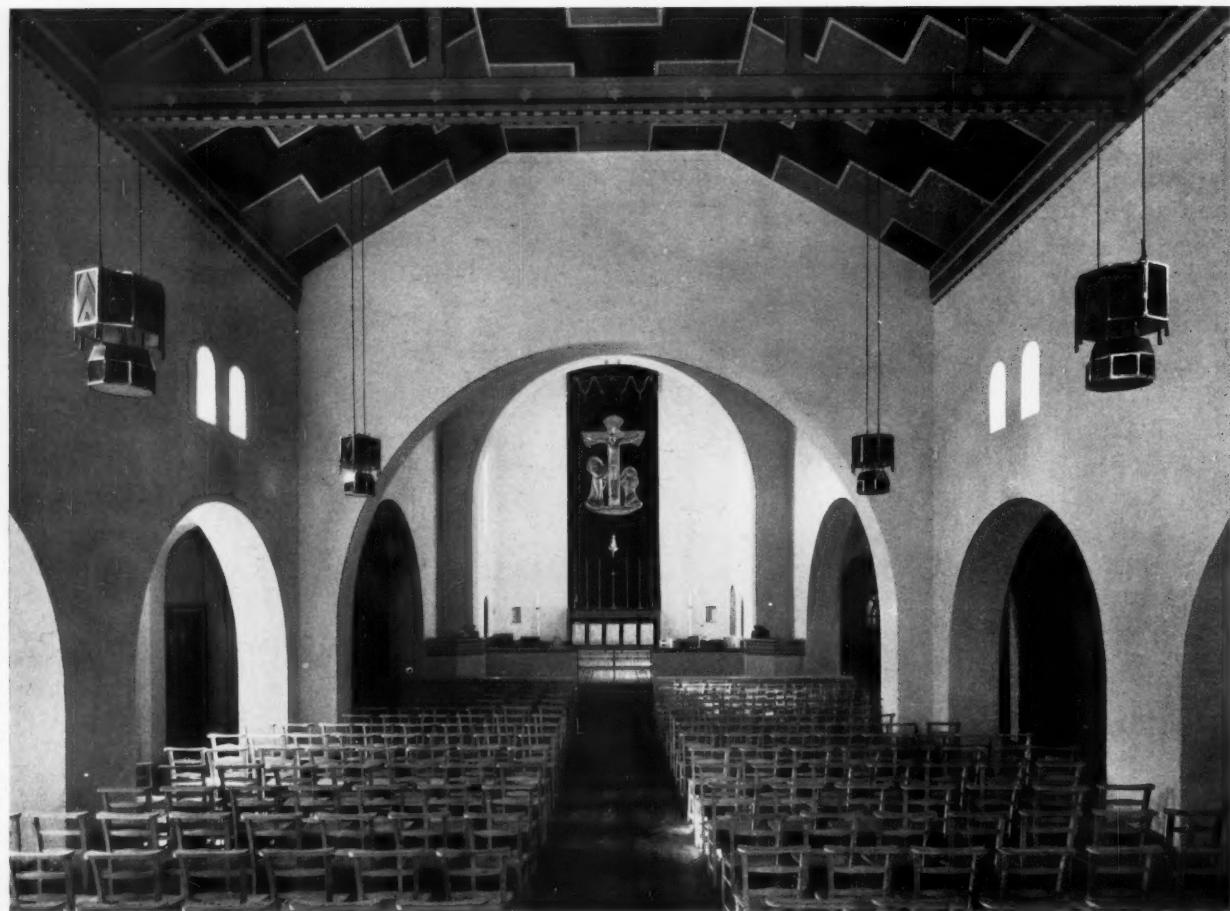
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ST. COLUMBA'S CHURCH, LIVERPOOL

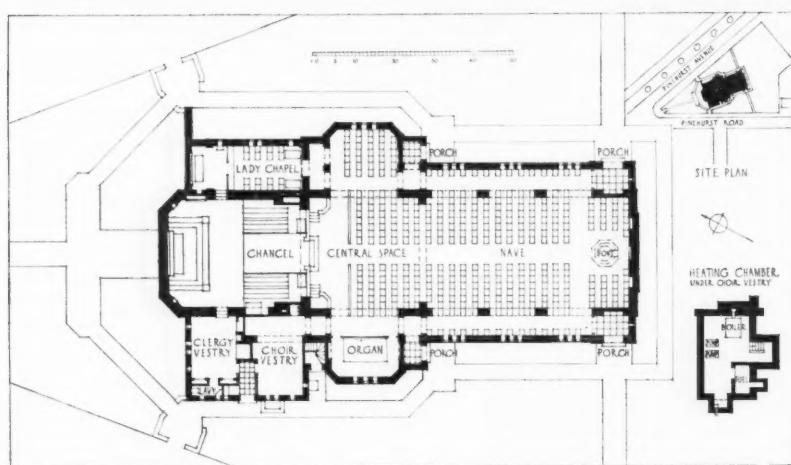
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6



4. From the nave. There is seating accommodation for 460 persons, including the choir. The walls are of rough textured cream plaster relieved by a ceiling of boards painted blue-grey and dark blue, separated by battens of silver-grey. The lighting fittings are Staybright steel, with panels in turquoise and violet blue. 5. The high altar. The altar frontal is of soft green silk. The cross and candlesticks are carved wood, gilded. 6. Plans of the church.



THE SANCTUARY

The Dorsal Curtain consists of a 30-feet length of deep wine-coloured velvet hanging from beneath a light wood-framed and plywood pelmet which is painted deep blue and outlined with silver.

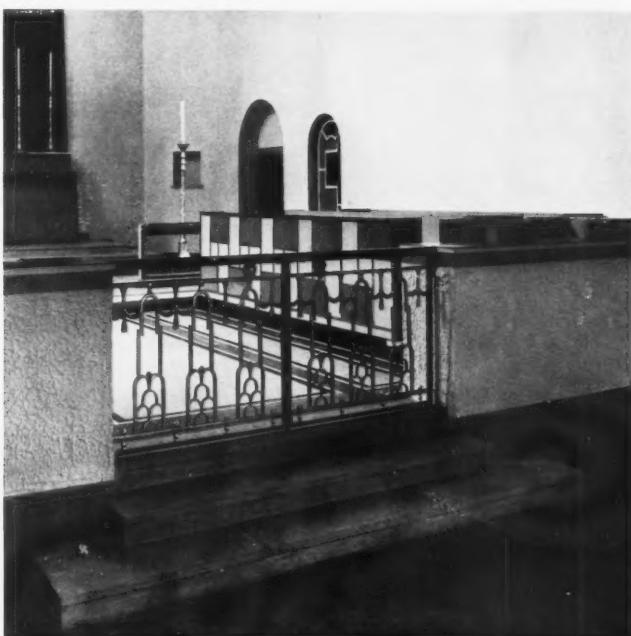
The Chancel Wall, Pulpit and Lectern are in rough plaster off a base of Hopton Wood, capped with narrow bands of blue and white. The book-rests to the Pulpit and Lectern are of Staybright steel.

ST. COLUMBA'S CHURCH, LIVERPOOL

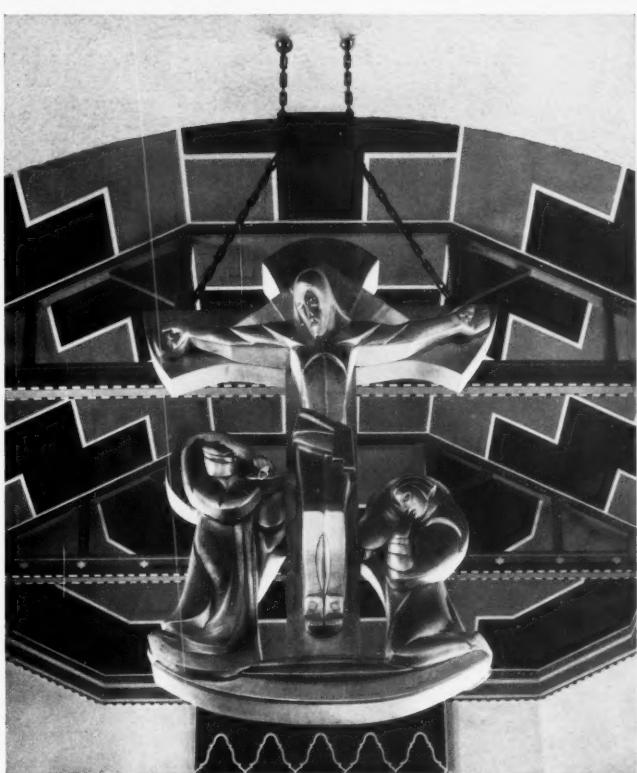
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8



9



10



7. The lady chapel. The walls and ceiling are cream and ivory. The sanctuary is paved with Hopton Wood and black and white marble. 8. The sanctuary gates are metal gilded on the face, with turquoise reveals and a bronze top rail. The choir stalls are in laminated board checked out in light and dark grey-blues, separated by strips of Staybright steel. 9. A rood by

Bainbridge Copnall, built up in laminated sections and covered with gold leaf. Its height is about 9 ft. The painted ceilings intensify the grey-blue colour scheme as they increase in height. 10. The font, built up in three blocks of Portland stone. The wood cover is in ebony with gold bands and is surmounted by a handle group in ebony executed by Bainbridge Copnall.

BAROQUE GARDENS OF

BY G. A. JELLICOE

A



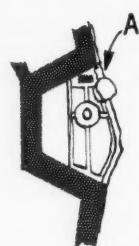
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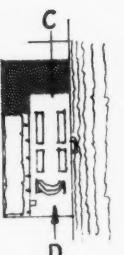
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The peculiar composition of the States of Germany gave rise to gardens more divergent in idea than those of any other European country. Italy, France and Austria, contributed their share of influence and politics became the deciding factor in design. Magnitude and intimacy are side by side, and while the south Bavarian gardens are striking through their vastness of conception, those of Franconia in north Bavaria appeal through



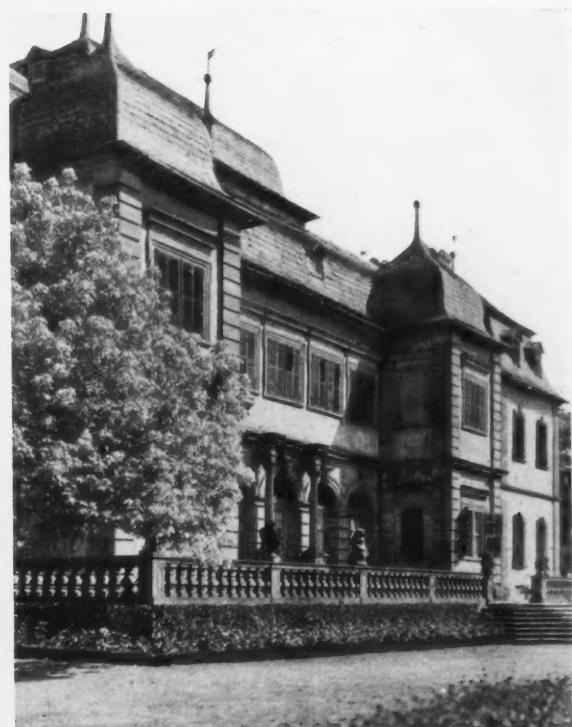
A. THE RESIDENZ ROSE GARDEN, BAMBERG. Laid out about 1808 upon the ramparts within the courtyard of the Neue Hofhaltung (built by J. L. Dientzenhofer for Lothar Franz von Schönborn 1695-1704). The statuary came from Schloss Seehof. The scent of 7,000 roses, the grouping of the beds and placing of sculpture, and the semi-enclosed position upon a huge retaining wall above the city of Bamberg, make this a classic among rose gardens.



B, C, D. CONCORDIA, BAMBERG. Completed by Johann Dientzenhofer in 1722 for Ignaz Tobias Bottinger. House and garden lie beside the river Regnitz, and the robust quality of detail and simplicity of composition are typical of this area. The building is the grandest of many small baroque houses in Bamberg, and the sense of security conveyed is far removed from the time when this city was the centre of witch-burning.

D

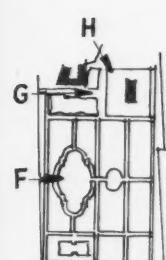
FRANCONIA, GERMANY



personal charm. Of the larger Franconian cities, Bamberg and Wurzburg are the most prolific in gardens, for the influence of the Schonborn family (reaching on the one hand to Mainz and on the other to Vienna) gave particular stimulus. Bayreuth is less of a garden centre, but the broad lay-out of the town itself is suggestive of the relation of Baroque garden design to town-planning.



E. THE UNTERES SCHLOSS, THE EREMITAGE, BAYREUTH. Built by St. Pierre for Margrave Friedrich in 1749-53. One of the most important garden fantasies and the most debased in Germany, perhaps in Europe. The Margravine appears to have reacted against her brother Frederick the Great, and the gay abandon of coloured stones and rock crystals and Roman Emperors is refreshing. The climax is the Sun Temple.



F, G, H. VEITSHOCHHEIM, WURZBURG. The house was built by A. Petrini in 1680 for the Prince-Bishop of Wurzburg, the garden being laid out about 1760. The formal and natural planting is charmingly combined, and the garden decoration, including the sculpture, is among the best of its kind. The group in the lake is "The Home of the Muses" by Ferdinand Dietz. Veitshochheim is described by Sachseveral Sitwell as "one of the most romantically beautiful gardens in Europe."

H

SOUTHAMPTON CIVIC

DESIGNED BY BERRY WEBBER

1



2

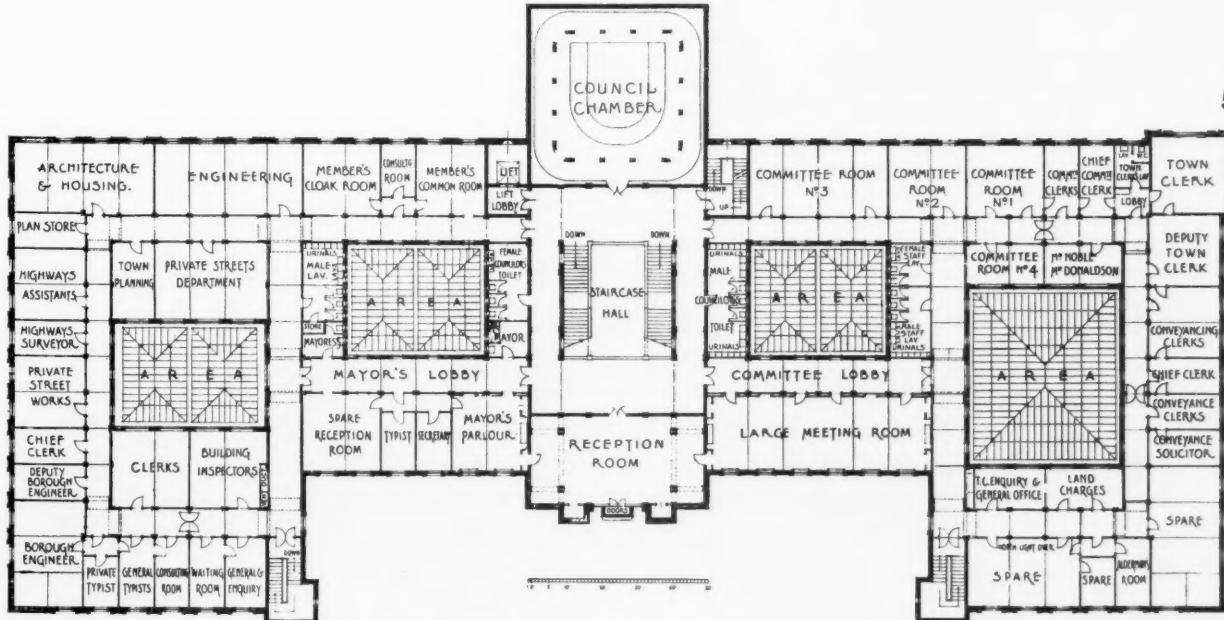
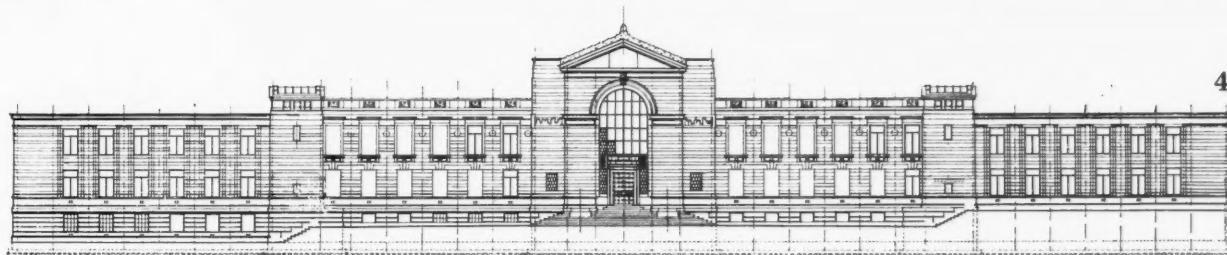


ALTHOUGH the building, which consists of municipal offices, is complete in itself, it will form a unit in a group of four when the whole scheme is completed. The large assembly hall will be the central dominating mass, and these offices will then form a south wing, balanced by a similar wing to the north containing the art school and gallery. To the west is now being built the courthouse with its tower. 1. The main (south) front of the new municipal offices. The building is constructed of Portland stone and the windows are in metal frames. The forecourt is paved with Empire stone and the circular carriage way with granite setts. 2 shows the main entrance with the subsidiary entrance and staircase tower in the distance.

CENTRE

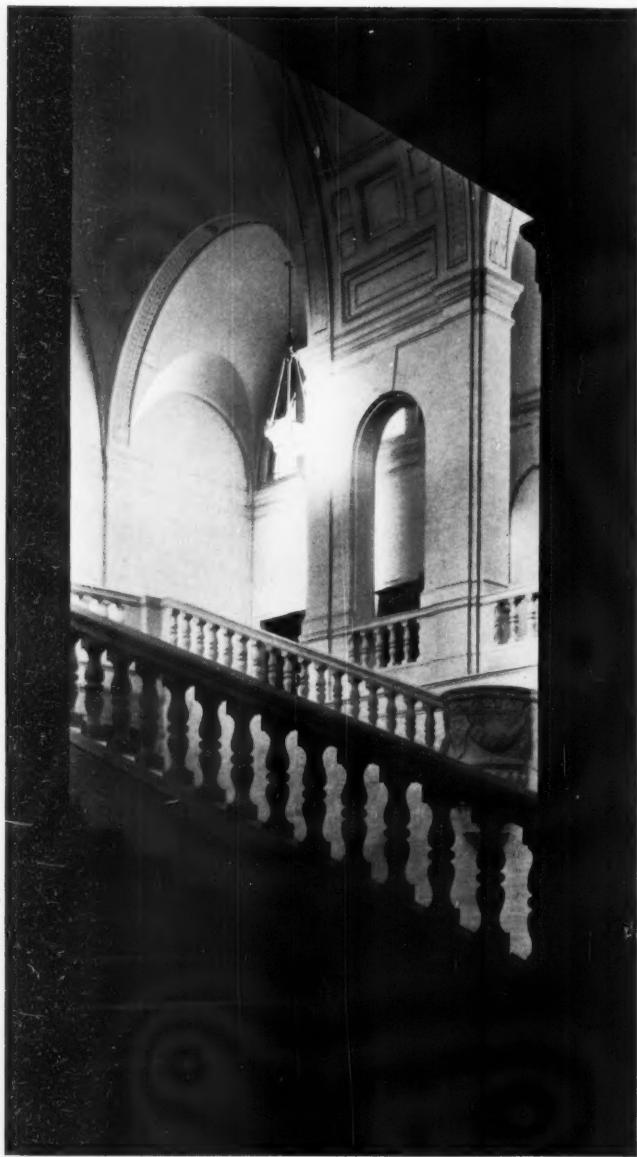
1. The rates office. The counter is of oak and the grilles are in silver and black metal. The walls are plaster and the floor is laid with "Karri," a red Australian wood. 2. The south elevation. 3. The first-floor plan.

3



SOUTHAMPTON CIVIC CENTRE

6



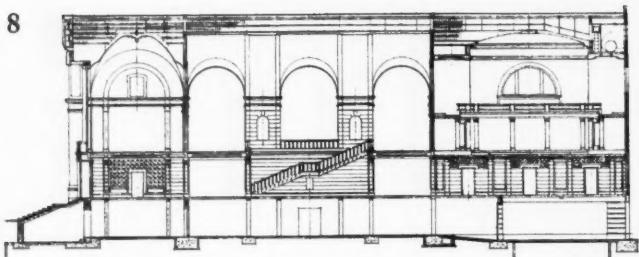
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9



8



6. Looking across the main staircase. The walls and balustrade are of Painswick stone. The stairs are marble and the ceiling, fibrous plaster. 7. The staircase hall from the doorway of the reception room. The doors in the foreground are hide-covered, with silver studs. 8. Cross section through the reception room, staircase hall and council chamber. 9. An enquiry office in the entrance vestibule. The walls are of Painswick stone and the floor of grey marble. The metal grille is black and silver.

A One-Room Flat of 1684

By Oliver P. Bernard

IN an admirable study of human aspirations entitled *The Conquest of Happiness*, it appears that our honourable friend Bertrand Russell regards Ecclesiastes as a gloomy preacher. In a more commercial compilation of great and near great Victorians, there is a recent essay by which Mr. Wilenski gives us to understand that Ruskin's limitations as artist, author, critic and social reformer were due to Bible reading when young. With all proper respect for the alternative views of a great socialist and a successful journalist, I submit the following query and conclusion as being a model of pungent wit and penetrating wisdom: "Is there anything whereof it may be said: See, this is new? it has been already of old time, which was before us." Without doubt, Bible reading is not fashionable amongst all who pride themselves on their awareness of the arts, especially the orchestrated variety known as architecture. In spite of supposititious causes of Ruskin's suppositional deficiencies, I wish it had been my good fortune to discover the critical vision of Ecclesiastes before the Bible was forced upon my innocence by mental assassins of the truth, and from whose malpractice it has taken me years to recover. As to deficiencies and discoveries thereof, are we not always discovering something new, something modern—on the list of our deficiencies? That is surely the process of all professional pursuit which is supposed to rid us of our own and protect others from their delusions between what is new and what is right. As to my own delusions, let me digress a little further.

Without dependence upon imported draughtsmen or assiduously digesting continental magazines of art, I have for some time considered the problems of building, meaning more than drawing, single-room flats or dwellings calculated upon the latest advantages of material and construction, to satisfy the requirements of the most ordinary and extraordinary people. True, there is no astounding novelty in accommodating one person or more in a single-roomed apartment; in Liverpool and Glasgow, for example, thousands have lived and are living as many as seven in a room without architectural fuss or municipal speculation. I had merely considered that this time-honoured custom might be more efficiently, even comfortably, satisfied without overtaxing ratepayers or antagonizing tenants. It seemed to me that such a venture would be somewhat new, say at least a little mere in advance along the lines of human necessity than perhaps Liverpool's latest banking house, tunnel, and cathedrals. It will not disturb me to learn that it is being done in Germany already, the idea has been common in Japan since the first Pyramids were built. Anyhow, as this digression is intended to show, Ecclesiastes understood all our most up-to-date ideas of town planning, preservation of ruralities, and other social hobbies about four thousand years ago. And I have just discovered a book such as collectors covet, a gem of early Italian pub-

lication, called *L'Arte di restituire a Roma la tralasciata navigazione del suo tevere*, containing the ideas of Cornelius Meyer of Holland, an engineer who dedicated this rare volume to Pope Innocent XI.

The subject is now brought to light by THE ARCHITECTURAL REVIEW after many years of undisturbed existence in the library of the British and other museums. This is thanks to a book of which a very fine copy was discovered and can still be seen in the Salamander Bookshop. It includes many other brain-waves that range from restoring the navigable channels of the Tiber, improvements in transport, to rebuilding Rome itself. All these ideas were apparently suggested for the consideration of the mother church, with the practical comprehension of a master builder and the inventive faculty of a Heath Robinson. Probably this particular idea of a self-contained, single-roomed apartment was conceived with circumspect tongue in deferential cheek as betokened the architectural bedside manner of that day. The design illustrated overleaf was obviously intended to tickle exalted desires for a thoroughly complete and up-to-date bachelor apartment, Anno Domini 1685. The four reproductions of the design showing the four walls of the proposed interior, and the illuminating catalogue of appurtenances, as gingerly translated from ripe old Italian, show deep consideration of those celibate and exacting requirements that once characterized the spirit of the Vacation. In such seclusion with such elaborate arrangements for sustenance, secret observation and communication with the outer world, Scarpia could have planned most comfortable counter-plots and deadly undoing of all who balked a Cardinal's will, whilst satisfying his personal appetites by the way. With our present-day facilities for presentation, this environment might have been produced as a *pièce de résistance* of a Roman Home Exhibition organized by publicity dope fiends if such educative allies as underground transport and newspapers had then been instruments of prelates and kings. But things were not done in that way until some years after Wren had neglected the opportunity of signing his name all over St. Paul's Cathedral as is now advocated as a prerogative of professional publicity. It is unlikely that this simple Dutch engineer knew what a profession is or what it is supposed to be, but by illustrations and highly ingenious descriptions extracted from his book, with its significant title, he appears to have been somewhat ahead of his time, which is a popular way of describing anybody who thinks and who consequently is a little ahead of those who don't think. As to whether Cornelius Meyer was a person who today would be described as one who carries weight in private and public affairs, it may be hard to say with authentic authority. So much weight-carrying in modern affairs, and in connection with so-called modernity itself, is summed up ever so succinctly by that grand old preacher, and humorist, Ecclesiastes: "There is no remembrance of former things."

A ONE-ROOM FLAT

1. Ingenious door at entrance to room which Amphibius requested of the Latins to have in the Badinelle, doubled and so disposed that one can open door as much to right as left (he means both ways).

2. The same door, the lock of which is so disposed as to close itself.

3. Burcau with different drawers.

4. Chest of drawers with table for writing and studying.

5. Drawers in the said chest for keeping clothes of the day.

6. Cupboard for books or library.

7. Cupboard for keeping books in which one records important things.

8. Similar cupboard for keeping private documents.

9. Similar cupboard for keeping curiosities and other treasures.

10. File (lit. string) for ordinary letters.

11. Tube for listening to

The First Wall

conversation in another room.

12. Similar tube for speaking to others without leaving room, and without being heard by those around, and tube for calling from afar.

13. Washing and shaving basin (lit. barber's basin).

14. Hens, which can come from garden and lay eggs in room without inconveniencing anyone.

15. Ladder needed for things placed high up; it folds up.

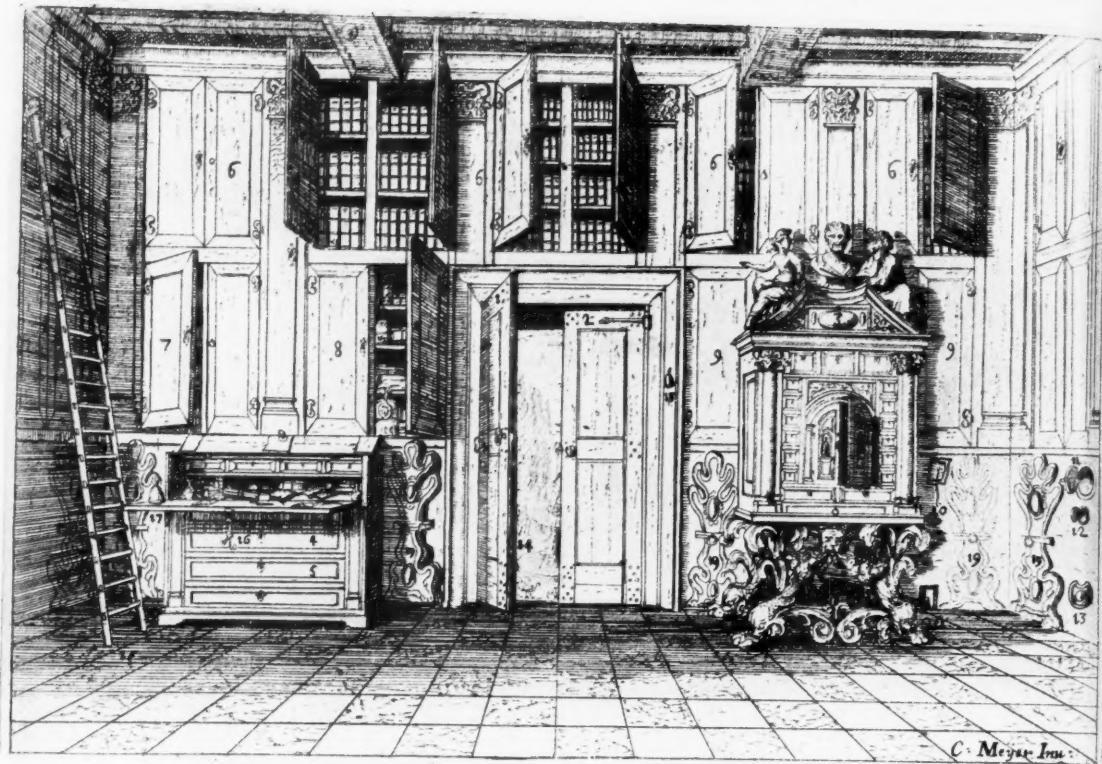
16. Keys fitting all locks in the house.

17. Bell for ringing.

18. Bell which can be rung by those who wish to enter.

19. Footstools which one can hide in the void so as not to take up space in the room.

20. Nest for little dog.



DEL FABRICAR COMMODO.

The Second Wall

21. Alcove with door inside to remake bed without entering room.

22. Bed in alcove.

23. Entrance doors of alcove.

24. Urinal.

25. Comb case.

26. Clock which goes for a year without winding up weights, with a lantern to see time at night.

27. Cupboard for holding instruments and tools.

28. Cupboard for holding clothes at end of season.

29. Cupboard for holding glass-ware.

30. Cupboard for holding clean linen.

31. Camera obscura for seeing who passes in street while one stays in bed.

32. Armoury.

33. Thermometer to know temperature.

34. Cupboard for holding dirty linen.

35. Cupboard for holding linen till one rinses it.

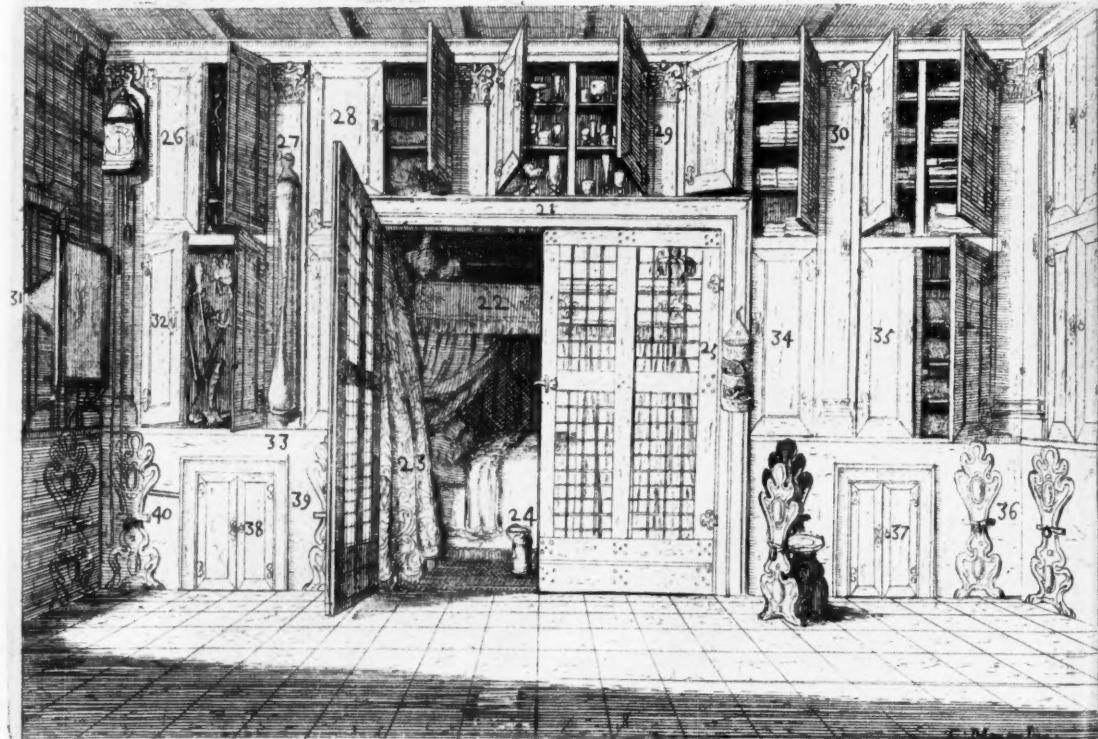
36. Secret stairs down to other apartments.

37. Cupboard for holding silver basins and decanters.

38. Similar cupboard for holding silver candlesticks.

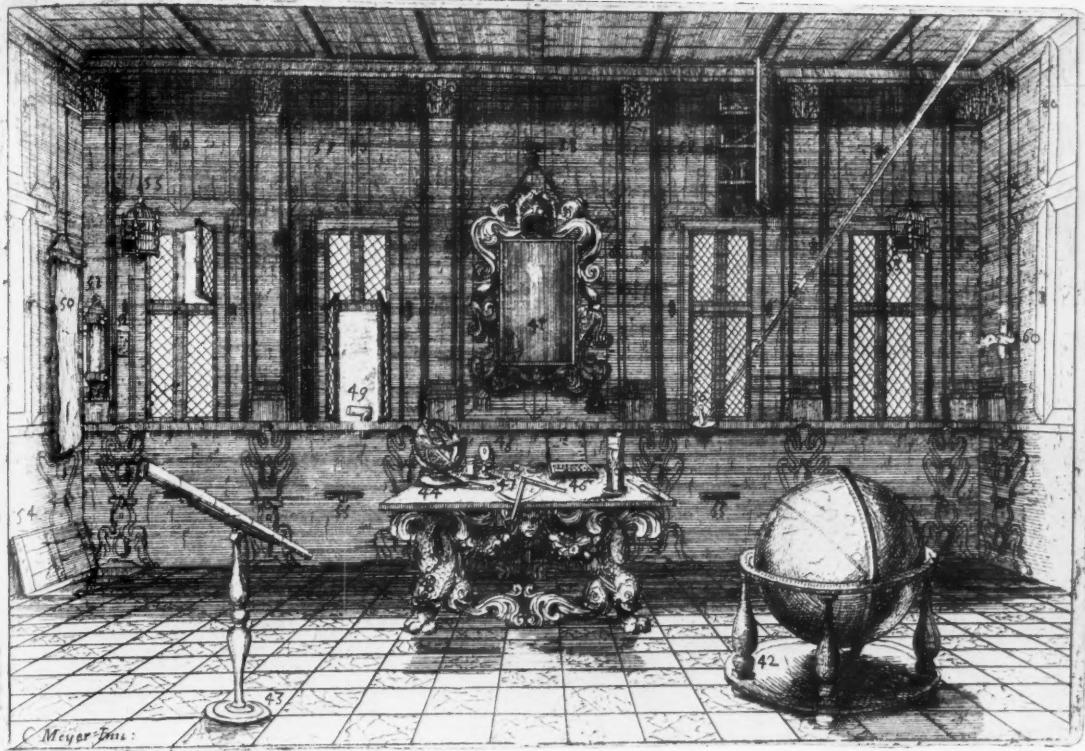
39. Solitary place behind, which never produces fetidness.

40. Small cupboard for keeping towels, handkerchiefs and similar laundry.



FACCIATA DEL SECONDO MURO DELLA STANZA.

The very learned Vitruvius, prescribing the rules of Architecture, wishes that a building should have four qualities, namely, stability, solidity, as stately an appearance from without as within, and the convenient distribution (or disposition) of the rooms for habitation. But perhaps on account of the large number of rooms of palaces and houses, it is impossible to have at one's disposal all that is desired without moving from one room to another, since all the necessities



FACCIATA DEL TERZO MVRo DELLA STANZA.



FACCIATA DEL QVARTO MVRo DELLA STANZA.

rules of qualities, nce from (or dispon on account ses, it is d without necessities

for the day are put in different places in the house. However, we want to demonstrate that it is possible to concentrate into one room alone all those necessities which arise in a large house or palace, and to have at hand all that is needed without bothering anyone.

To explain clearly the idea, the four faces of the walls of a room are shown in which the decorative aspect can be seen. All the necessary accessories are indicated by numbers.

The Third Wall

- 41. Looking Glass
- 42. Globe.
- 43. Telescope.
- 44. Astronomical sphere.
- 45. Microscope.
- 46. Gold weight.
- 47. Mathematical instruments.
- 48. Table with aperture underneath, the floor below to receive fresh air.
- 49. Spy-glass made with concave mirror to see who passes in streets.
- 50. Towel.
- 51. Almanac.
- 52. Table for making notes of reminder.
- 53. Cage for birds.
- 54. Bin for keeping wine and other drinks cool.
- 55. Boards one can pull out for seats.
- 56. Sundial which, reflecting in a little mirror, by reflection denotes the time represented by the sun, with the meridian line to tell the lengthening and shortening of the days.
- 57. Cupboard to hold gold coins.
- 58. Cupboard to hold silver coins.
- 59. Cupboard to hold precious jewellery.
- 60. Bread cupboard.

The Fourth Wall

- 61. Chimney for smoking meat, with a vent hole that will never make smoke, and a spit which can be used alternatively with the smoke.
- 62. Iron grate within the chimney, behind which one can make in the wall space a receptacle, within which water will always be boiled by the fire and one could draw it off from another room behind the fireplace by means of a tap.
- 63. Another similar iron hearth placed in the floor of the fireplace which serves to keep in the heat and protect the floor which the fire cannot damage, nor burn the ceiling of the room below.
- 64. Fire-dogs with poker for exciting the fire.
- 65. Vessel to put the fire and ashes in during the night, which then go out by themselves.
- 66. Dutch fire-tongs.
- 67. Similar small poker.
- 68. Similar bellows.
- 69. Various drawers for keeping gun, fishing rods, candles, matches, tobacco and other things.
- 70. Chair for resting during the day, with tapestry above to divide the room in four parts.
- 71. Mortar.
- 72. Press for holding down the napkins and table cloths.
- 73. Drop-down kitchen table: easily put up.
- 74. Cupboard for holding plates, basins, etc.
- 75. Furnace with receptacle for distilling different tastes.
- 76. Table for cleaning and sharpening knives.
- 77. Two taps, for cold and hot water.
- 78. Bins for wood and coal.
- 79. Furnace for cooking various things.
- 80. Stove for cooking.
- 81. Cupboard for holding dishes, plates and other similar things.
- 82. Washing-up device which does not leak.

A LUTHERAN CHURCH IN BRICK

DESIGNED BY DR. CURT STEINBERG.

1



2



One of the most interesting phenomena in post-war Germany has been the vigorous renaissance of the Lutheran Church which followed its disestablishment in Prussia after the Revolution of 1918. Whole new parishes have sprung up since then for which churches had to be built with heavily depleted resources.

The first church built by Dr. Curt Steinberg, the chief architect to the Lutheran Consistory of the Mark of Brandenburg, was that in the Südende quarter of Berlin (1912) : a design that was decidedly interesting for its period. During the last five years he has finished three more which are neither "reactionary" nor "revolutionary," but simply sane, finely-handled modern restatements of the time-honoured principles of church design. Two of these, the Georgskirche at Frankfurt-an-Oder (1928), and the Luther Church at Landsberg-an-der-Warthe (1930), 1, 2 and 3—which are oval in plan, with conical red-tiled, brick-groined cupolas—echo the shape



of Bähr's famous Baroque *Frauenkirche* in Dresden. Both are faced internally as externally with Ilse bricks of a beautifully soft, slightly-mottled, cherry tint. In each a detached steepled sacristy rises above the centre of a wide-stepped porch placed on the main axis. But whereas the charming Frankfurt-an-Oder church is a bold simplification of what we should probably call "German Georgian" (the graceful spire has a marked affinity to some of Wren's, as well as certain older Hanseatic exemplars), that at Landsberg is a severely forthright vertical composition without any trace of stylistic eclecticism. Here the plain square brick piers of the tower are repeated between twenty very tall and narrow windows; while the sparing interior ornament is purely symbolic in character. 1 shows the detail of a window-bay, 3, the general aspect of the church, with its domed apse and belfry-tower, and 2, looking up the steeple.

P. MORTON SHAND.

The Book of the Month

Caught
in the Crash

By Gerald Heard

TOMORROW'S YESTERDAY.
By John Gloag. London:
Geo. Allen and Unwin. Price 6s.

THIS book, as Browning's Bishop says, is "nicking the minute with a happy tact." It could hardly have chosen a more effective moment to make its appearance. It is the story of an advertising agent who had the opportunity to put over an immense civilization-propaganda film and what came of it. To welcome it and help the public to give it serious attention there comes the announcement that Mr. Wells, who himself has also written a civilization-propaganda scenario, is to be allowed, if not to put over that, at least to advise in the film production of his *War in the Air*. And Mr. Gloag has not only circumstances to help him. The book itself is well fitted to fight its own battle. At the centre, as has been said, is the scenario of a film which was to tell London and the world what awaits them if they will not, as the prophets used to say, turn from their ways. This scenario describes two beings of 'As far as thought can reach'—to use the Shavian chronology—"looking in" (as the latest time-machine experts seem to be quite certain that they will) at our civilization which will be lying in the aeonic past. As becomes creations of the film these super-beings are able not only to unwind that past like a reel before them, but when they would reflect they can stop us in our instructive recapitulation of our follies and there—whether at an advertising directors' meeting or at our "affairs of the glands"—examine us as dreadful stills caught and fixed in the act. Such a fancy is in itself a powerful adjuvant and rationalization of that old enforcer of behaviour, Th' All Seeing Eye. But the Far-as-Thought-can-Reachers are not content with seeing and showing us as we are. They hunt up our past: show where we might have gone right and did go wrong. We come upon a clear little dialogue between an Americanized Pilate and a Gallicized Herod a couple of hours after the world's greatest Execution. Then they give us a shot or two of our civilization caught in its crash.

So much for the picture; now for its presentation frame. One side gives us the World That Puts Things Over. With full and bitter knowledge Mr. Gloag gives us before and after the film the advertising world that has to make an impression on what Plato called the hide of the Great Beast and what Mr. Wells describes more civilly as the vast inattentions of mankind. The other side shows what journalists, being all reduced to practical Pavlovians, call

the Public's reaction to the prod. The publicity agents are persuaded to put over the new idea with a new theatre—charmingly described—and a new projection apparatus to help. The Public and its parasite (perhaps one ought to say its Symbiot) the Press succeed in throwing off the infection. Mr. Gloag knows his Press, his Public and his "Advt." world. This is perhaps the most entertaining part of the book, where he gives the whole gamut of press reaction, from the cat-calling gutter up to the scholarly sniff, to the new film's propaganda. Certainly he has made an original defence, for no one can attack his book without first having read a parody of the attack in the specimen press cuttings with which the book draws to a close. This reviewer has no wish to attack. On the contrary he feels that on the success of the idea that inspires this extremely readable book turns the fate of civilization. At the end of the film man has failed, and life, after as long as it took to evolve men, derives again intelligence, this time not hopelessly biased and doomed by passion, from (of all things) the feline stock. At the end of the book, after the film has flopped, we see the men who failed to make it fly, looking up to see the oncoming air attack which is to wipe out London. So the prophets have usually closed. Does not the greatest prophetic canon in the world close with the minatory, stop-press words, "Lest I smite the world with a Curse"? More, however, have always listened than the prophet could know. Civilization after civilization has crashed, it is true, but out of the ruin something more vital has built itself. Even this latest of the prophets who call themselves John owns that. There is an undying force in the universe and though its attempts to co-operate with us break down it will not be stultified by our stupidity. Such a reflection may be the beginning of wisdom. Certainly this latest addition to the canon of social reconstruction should be studied.

Shorter Notices

Full-Size Details

Architectural Turned Woodwork of the Sixteenth, Seventeenth and Eighteenth Centuries. English Wrought Ironwork, Mediæval and Early Renaissance. By TUNSTALL SMALL AND CHRISTOPHER WOODBRIDGE. London: The Architectural Press. Price 8s. 6d. net each volume.

AT a time when mouldings are at a discount among so many contemporary architects, a portfolio of full-size details of English turned woodwork should prove a useful reminder. One cannot fail to notice the difference in quality in, say, the balusters of a staircase in a seventeenth century college or the Inns of Court and its counterpart in even the more expensive modern domestic buildings. This difference is almost always due to the proportions of the mouldings; mouldings are the distinctive feature of Lutyens' work and even he does not improve upon some of the little-known staircases and landing balusters illustrated in this portfolio.

The *English Wrought Ironwork* portfolio will serve more as a record than as a practical exemplar of useful and satisfactory designs for hinges, latches, railings, drop handles, knockers and key escutcheons except in so far as these designs can be adapted to the requirements of the metals which have superseded wrought iron in domestic architecture.

One can only regret that more works of this sort are not published, for measured drawings as excellent as these convey the skill of English craftsmanship far better than lavish and expensive volumes of photographs.

THE SETTING

1



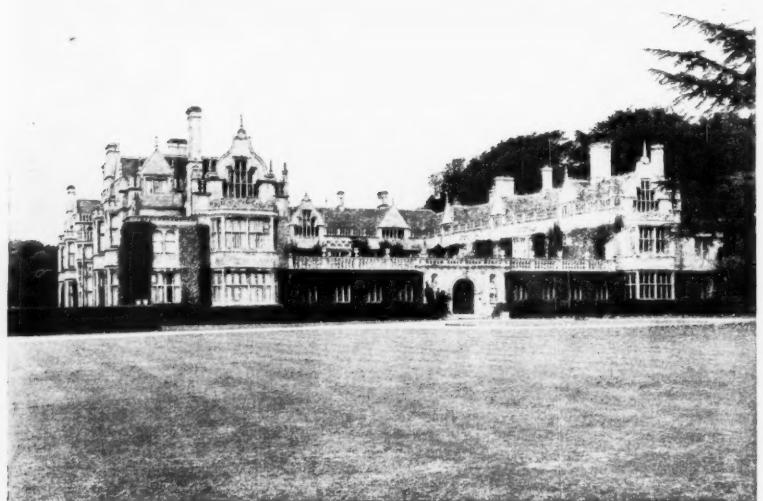
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A New Standard Book*

On page 305 of this issue will be found a letter from Mr. Harry Batsford, the architectural publisher and joint author of this book, on the publication of cheap books on art, such as the German Blue Book Series, in England. Here he says: "The average well-to-do young couple rejoices in its six-cylinder Coverground, its six-valve-hundred-station-getter, its roaring electric gramophone; its library will usually consist of two rows of standard and current fiction—more current than standard."

The authors have, therefore, produced a standard book containing beautiful illustrations of all the more representative houses of England varying from Lower Brockhampton Hall, Herefordshire, which stands at the end of a weedy lane to Parnham Manor House, Dorset, in its formal seventeenth-century garden of stone and yew and to Holkham Hall, in its undulating eighteenth-century park and to Sezincote, with its Mogul surroundings and Trentham, that swan song of English formal gardening, where Barry laid out the terraces. These and many others, for the book contains nearly 200 photographs, are a fitting and practical delineation of the views expressed in Mr. Batsford's letter. The reader who looks at the illustrations will realize that it is a memorial volume to a lavish England when no errors of taste were committed, and in which there is no room for the modern young couple the author has described. For this reason alone, putting aside the methodical presentation, interest and illustration, the book is important. There is hardly a park now without villas or encumbrances that have caused it to lose its trees, break down its gates, and make a wilderness of gardens. The tarred roads coil closer round the big houses, bringing with them scores of well-to-do young couples; as Lord Conway says in his foreword to this book: "We are faced by the imperative demands of economic necessity, which sweeps away the venerable and replaces it by the commonplace and shoddy."

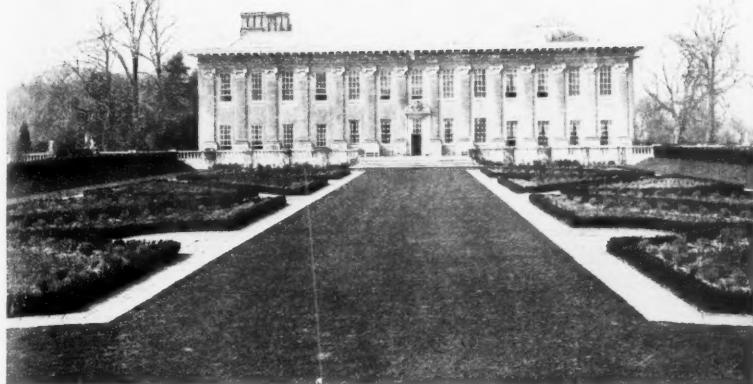
This is the third memorial volume to England's dead. The former two in the series dealt with cottages and villages. This, which deals with houses, is the most intimate of the three. The authors write of English country houses: "Generally speaking, however, they have existed in that uneventful ease and placid obscurity that were the criterion of so many of their owners, though a few lines by so copious a diarist as Evelyn or so indefatigable a commentator as Mrs. Fiennes can sometimes bring to life a whole epoch in their domestic history."

**Homes and Gardens of England*. By Harry Batsford, Hon. A.R.I.B.A., and Charles Fry. London: B. T. Batsford, Ltd. Price 12s. 6d. net.

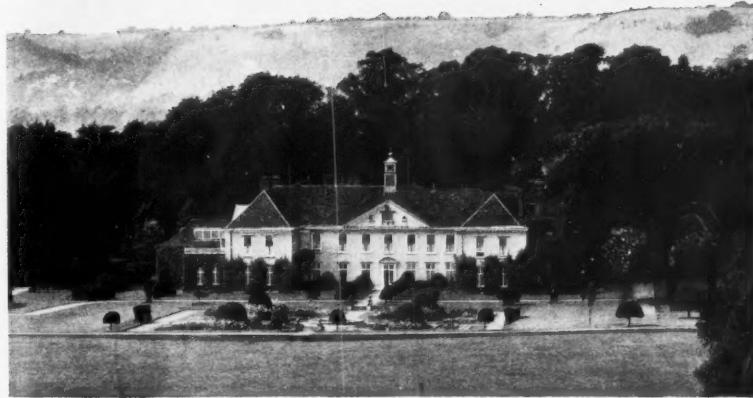
G OF THE ENGLISH HOUSE

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It has not been found possible to include interiors, since it is with the development and setting of the English squire's house that the authors are chiefly concerned. A chapter gives an account of English country houses from the Middle Ages to the Civil Wars, followed by a second dealing with the period from the Civil Wars to Queen Victoria's reign. The last chapter treats of gardens and parks, and there is a useful connotated list of the houses illustrated at the end of the book. The work is not, as it cannot be, comprehensive, but the text and illustrations co-operate in making it a complete history of the unostentatious progress of British domestic architecture, and that is all we want.

The day of the country house is over, and as soon as a house becomes the property of the nation or some municipal authorities it loses its serenity, and the park and garden are not the same if there are no longer any trespassers. This all makes *Homes and Gardens of England* a sad book; but a book to be read with melancholy pleasure, a pleasure that is increased by its compact form and the agreeable shape of the pages.

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As important as the Architecture of the English House is its setting. The mediæval and the seventeenth-century manor left the country around unchanged, and were built near a village or a church. As times grew prosperous and marauders became less frequent an enclosed formal garden took the place of a moat 1, 7. Later as protection seemed less necessary and the populace became more law-abiding the formal garden, with its clipped yews and heavily barred gate and high walls, extended itself and looked out on to a lawn 4 and a lake 3. The walled garden dissolved into an unwalled pattern of beds ranged as a fine setting to the house, as may be seen in the broad avenue up the garden front of LEES COURT 5. But it was in the lavish days of the eighteenth century that English gardening reached its height. Then those protagonists of the lost art of landscape gardening, men like Kent and Capability Brown and Repton, thought nothing of altering a whole thousand or two of acres to create an effect with vista, wood and eye-catcher. Houses and even, in the case of Sir William Chambers at Milton Abbas, whole villages were removed and rebuilt. With an eye to the future, which the present generation does not possess, since it contents itself with rapid-growing and hideous copses of firs, these gardeners planted long avenues for their great grandchildren, and crowned the

7



8



downs with beech clumps, 2 and 6. When all architecture in the last century became chaotic, gardening remained true to the eighteenth-century tradition, and it is almost an invariable rule today that owners of country houses, who will think nothing of the eighteenth century halls and saloons in which they live, will have an eye for the improvement of the landscape beyond the possibilities of the average "man of taste," who will potter about in a rock garden and muddle up his vistas with crazy paving. These illustrations, all of which come from *Homes and Gardens of England*, show how important to the English house is its setting 1. STANWAY, GLOUCESTERSHIRE, early seventeenth century, showing the landscape value of an unspoiled graveyard. 2. GUY'S CLIFFE, WARWICKSHIRE, an early eighteenth-century avenue. 3. ASTLEY HALL, LANCASHIRE (Elizabethan), the disruption of the formal garden. 4. RUSHTON (c. 1630), with a lawn as plinth. 5. LEES COURT, KENT (1650). 6. REIGATE PRIORY, SURREY (Restoration type), the park in the heart of the downs. 7. LITTLE MORETON HALL, CHESHIRE (1559), a moated grange. 8. TRENTHAM, STAFFORDSHIRE (mid-nineteenth century), showing the lay-out by Sir Charles Barry, the last landscape gardener of England.



SIR REGINALD BLOMFIELD ON "SOLOMON."

An Architect's Reminiscences.

Memoirs of an Architect. SIR REGINALD BLOMFIELD. London : Macmillan.
Price 10s. 6d. net.

SIR REGINALD BLOMFIELD is known among the profession as an architect, but the chatty, hearty and somewhat breathless autobiography Macmillan's have published* shows that he has been, in his crowded life, many other things beside. Who, for instance, knew that Sir Reginald was a cricketer? and yet we find him playing for Rye in the company of Albert Trott, who, although he was so intoxicated he declared he could not see the ball, proceeded to hit it out of the ground with the utmost regularity. Sir Reginald made some of his runs against bowlers on the edge of the county-class, and it is with considerable, and understandable, satisfaction he tells us that once, when Murphy, a fast bowler who was being tried for Kent, attacked him with well pitched-up balls on his leg stump, he hit him for four successive fours. Murphy got him with the fifth ball, but Sir Reginald obviously hears the music of those drives in his mind still. It is natural that anyone so robust as Sir Reginald should deplore the tactics and technique of modern cricket ("I attribute much of the dullness of modern first-class cricket to the substitution of canniness for the old aggressive spirit; indeed, it is far more amusing to watch village cricket when the blacksmith slogs the ball out of the ground with a total disregard of the conventions of first-class cricket, than to watch one of our well-known amateurs refusing the ball and never lifting his bat above his knee"), and it is interesting to read that he considers the genius of K. S. Ranjitsinhji had an unfortunate influence on the development of English cricket.

Sir Reginald, too, used to play a lot of Rugby football, both when he was at Haileybury, where he was in the school side, and later at Oxford, where he considers he might have got a "Blue" had it not been for a mistake he made in a college match. He gathered the ball and kicked to touch, but, unfortunately, the ball was wet and heavy, and he sliced it to Gowler, the Oxford captain of that year, who scored. As it was he played five times for Oxford, and that is enough for glory for anyone. It is very typical of Sir Reginald's outlook on other things than games that he should disapprove of the development of modern Rugby as well as modern cricket. The game

*A letter on the subject of this volume will be found on page 305.

he writes, is being spoilt by "over-specialization and too much cunning," and "over-specialization and cunning" are, it is easy to see, repellent to Sir Reginald, who is all the simple pattern and the straight, direct line.

The greater part of the book is, of course, devoted to architecture, and accounts of Sir Reginald's struggles, achievements and triumphs. The City Church and Waterloo Bridge controversies are fought out again at some considerable length, and it is significant that Sir Reginald almost invariably writes at his best when he has something to attack. His last chapter has as its title-head Browning's lines :—

"I was ever a fighter, so one fight more—

The best and the last,"

but just as one is nodding one's head in appreciation of its appropriateness, Sir Reginald goes on, "So Browning wrote, but I was nothing of the sort, being, as I always assure my friends, the most placable of men."

Placable in his private relations we have no doubt that Sir Reginald has always been, but the architectural profession has reason to be grateful to him for the pugnacity which he has displayed on behalf of public causes worthy of support. One cannot read this book without being impressed by the large amount of time and energy which he has devoted to purely disinterested services to institutions such as the R.I.B.A., the British School at Rome and the Royal Academy. That he has not yet been President of this latter body is no credit to it. Perhaps the reason why he has not yet achieved this distinction is that in a society predominantly composed of painters he has advanced the claims of architecture with an insistence which has proved itself displeasing to practitioners of the other arts. Yet Sir Reginald's election to the Presidency would confer honour on the Royal Academy. Let us hope that in a second edition of this book there may yet be a chapter describing his activities in this capacity.

Sir Reginald gives us the interesting piece of information that his principal regret with regard to architecture is that he was not given an opportunity to collaborate in the planning of Delhi. Yet as the designer of the New Quadrant, Lambeth Bridge and the Menin Gate, to mention only a few of his works, he will leave extensive evidence of his talents. The younger generation of architects sometimes refer to Sir Reginald as "a member of the old school," as if they themselves had little to learn from him. Let them read this book and consider whether there are many young men at present starting professional practice who show signs of developing Sir Reginald's public spirit and his readiness to fight the battle of architecture on all occasions.

The reader will not need to be reminded of Sir Reginald's literary activities, which have occupied a large part of his life. "The Formal Garden in England," and the histories of English and French Renaissance architecture have long been regarded as classics. It is of great interest to learn at first hand details of the early training which resulted in his intellectual development. He is a product of public school and Oxford, and unlike some of the modern alumni of these institutions, he does not deride the system of education which they exemplify, but frankly confesses to have received benefit from it. In particular he praises the classical "Greats" school, and maintains that a study of ancient Greek and Roman civilizations combined with an intensive course of philosophy is the best of all preliminary preparations for architectural practice.

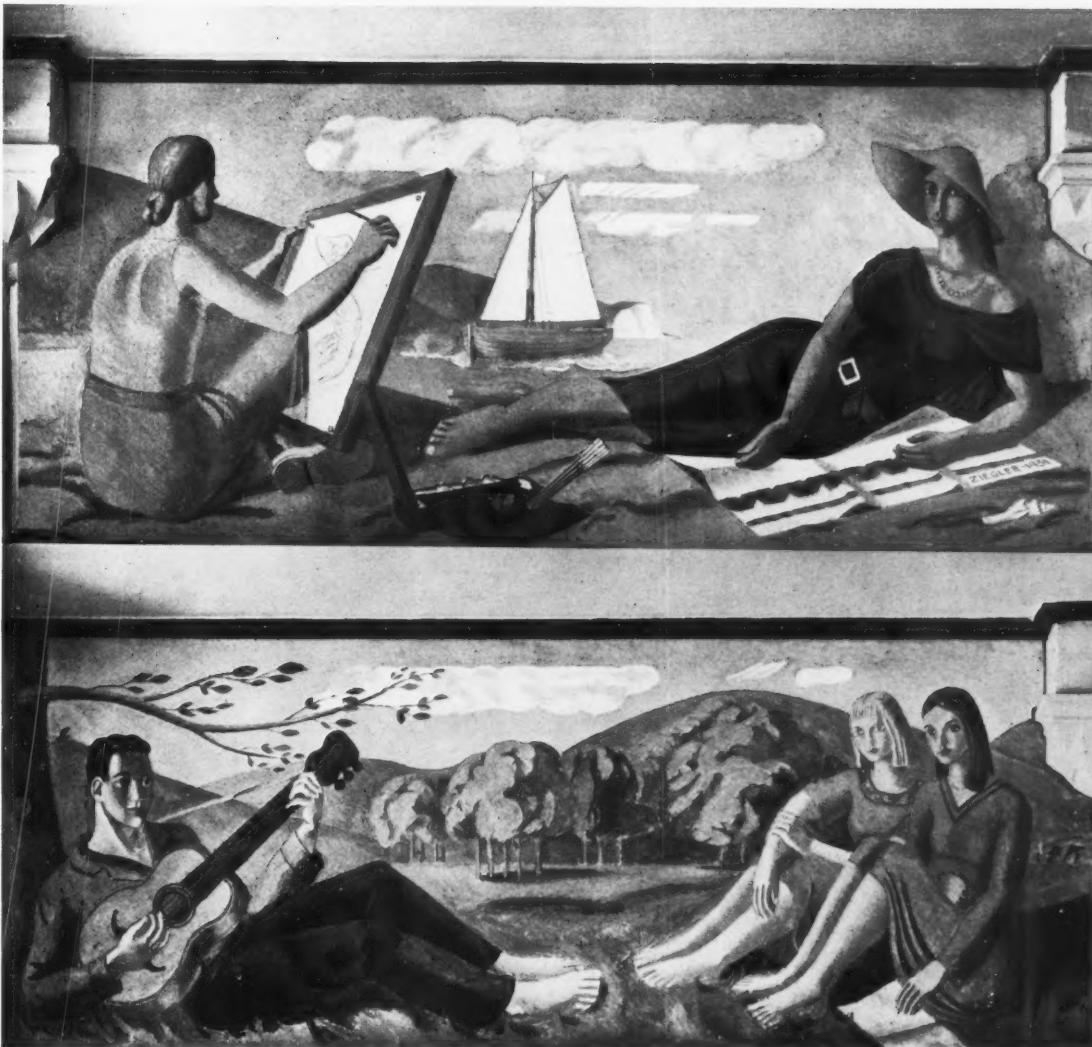
DUDLEY EDWARDS.

A Re-issue.

Architecture. By SIR THOMAS G. JACKSON, BART., R.A. London : Macmillan.
Price 12s. 6d. net.

THE late Sir Thomas Jackson's monumental work on *Architecture* is the most lucid explanation of architecture until the middle of the Renaissance which has been written. Although many may not approve some of the buildings which he illustrates and selects for admiration, his calm descriptions, his easy method of showing the development of architectural styles make his book interesting reading, a rare quality in a work about architecture. This achievement is due to the fact that Sir Thomas Jackson was a prose-writer as well as a scholar.

PAINTING



PAINTING and *MUSIC*. Two of the frescoes by Archibald Ziegler in the hall at Toynbee Hall, Whitechapel, London.

The Pilgrimage to Petticoat Lane

"Toynbee Hall," writes Charles Baedeker, "was founded in 1885 and named after Arnold Toynbee (1852-83), who died in the prime of life while lecturing to working men on political economy. The hall contains rooms for about 30 residents, chiefly Oxford and Cambridge graduates desirous of sharing the life of an industrial population. It contains also drawing rooms, dining, reading, and lecture rooms, a library, etc., in which social meetings are held for the people of the neighbourhood. The hall is open to visitors, but there is little to see, except in the evenings of autumn and winter." What do you see then? The interminable subfusc city with its Mecca Cafés widening suddenly into the Kosher-ridden boulevard at Aldgate; Commercial Street turning off from Whitechapel, with a Woolworth's on the corner, and a little way up it, a Tudor portico. Inside are red-brick buildings, diminutive quadrangles, the authentic gloom of an Oxford college. The hall, true to type,

is perhaps the gloomiest of all. It is here that Mr. Ziegler's frescoes have come to adorn the sombre panels. They are ranged round the top and represent the various activities of the settlement. A sculptor is chiselling a bust of Mr. Shaw, a man and maid are acting in a mediæval pageant, boys and girls are reading or dancing a morris to a woman fiddler. Elsewhere they are dispersed into a group of broad-beamed hikers. The women are sturdy, full-breasted, Jewish; the men earnest and healthy; the colours bright and congenial, still struggling bravely with the murk of the room. There are also deeper subjects: the skeleton of a mammoth, God seated at His Solar System and some heathen building a dug-out on a coral strand. The whole suggests a clean, co-educational, D. H. Lawrence way of living, a conception of life for the industrial worker that is speedily dispelled when one emerges on the Whitechapel High Street.

CYRIL CONNOLLY

A Free Commentary

By Junius

THE British manufacturer may well resent the avalanches of unsolicited advice which are being loosed upon him. I should like to add a boulder. Makers of apparatus for use by ignorant laymen—for lighting, heating, draining, water softening, to take common instances—do not pay sufficient attention to the important matter of issuing readily intelligible instructions. Of five such instruction sheets which have come under my active personal notice lately three are hopelessly inadequate, and one, though the matter is adequate, is disorderly in form, making it easily possible to miss the proper sequence of a series of operations the performance of which, in improper sequence, is attended with considerable inconvenience.

* * *

I should like to lay down some principles. First: the composition of an intelligible instruction sheet for technical processes for the use of laymen is a literary problem of very considerable difficulty. The last person to be entrusted with it is the man who is so conversant with the machine and process that he does not understand the difficulties of one who comes to the business for the first time, and who thinks his simple technical terms are understood by everybody. It should be assumed that they are not, and that diagrams adequate for the use of the technically instructed are often unintelligible, or intelligible only with difficulty to the amateur. The kind of mind requisite for attacking this problem is that possessed by Mr. Arthur Mee, of the admirable *Children's Encyclopedia*. And that kind of mind and of approach can convey simple explanations of the operations, as against a mere enumeration of them, which make those operations intelligible and therefore interesting—and more easily memorised.

* * *

A sinister explanation of this carelessness on the part of manufacturers might be that having effected the sale of their apparatus they are not much concerned with the difficulties and perplexities of its users. But that would be too obviously bad sales tactics—completely satisfied users being the best of salesmen. The explanation is to be sought rather in the lazymindedness which prevents the maker projecting himself into the mind of the user.

* * *

And when your intelligible formula of instruction has been found it remains to put it into orderly, attractive typographical form—in contrast with the squalid jumbled presentation so commonly to be met with.

* * *

Nobody, I suppose, at the moment feels particularly well disposed to his banker who blandly offers him a half-per-cent. interest for money deposited and exacts five for money borrowed. (I am aware there are justifications for this practice, but we can't go into that!) But I confess to having been stirred to kindly feelings for one bank at least—the Westminster—for an excellent piece of work done in the cause of good printing. The bank has issued for the guidance of its printers a most intelligently planned and written book of rules and instructions, with the double aim of attaining a certain unity of style—a definite note of distinguished personality—in all its printed matter and of “approximating more closely to the higher standards of typesetting and machining which are becoming increasingly characteristic of the present century, no less in commercial forms than in book printing.”

The little book will command the attention of experts, if not always their approval—they are a proud and jealous race—not merely because of the obvious distinction and style of the examples and the reasonableness of the specifications, but because it displays a knowledge of type and processes unusual in the exacting amateur.

* * *

It is obvious that large corporations owe it to themselves to maintain high standards of orderliness and decorum in all printed matter used for the transactions of their business, not only, I submit, in those forms which are seen by their customers, but in those also which are used in their own private records and inter-departmental correspondence. Many firms which see the business advantage of the first, fail to understand the importance of the second. Staffs are stimulated and educated insensibly by seemly, and helped by orderly, well-planned, forms, and if pains are taken as in this instance, to determine what is wanted and to set it all down clearly, decent forms can be had for less than the price of the indecent.

* * *

The half-dozen forms set out in this particular book of instructions are bare of all ornament and of all the irrelevant dots and dashes so beloved by the undisciplined compositor, and derive their distinction, as such things should, solely from the intelligent selection of the weights of the type (Caslon and Caslon Monotype are the types specified) and rules and the excellent balance and spacing. There can be no question of the favourable effect made on the banks' customers, or of the value of such an example as wide-rippling propaganda for intelligent and seemly printing.

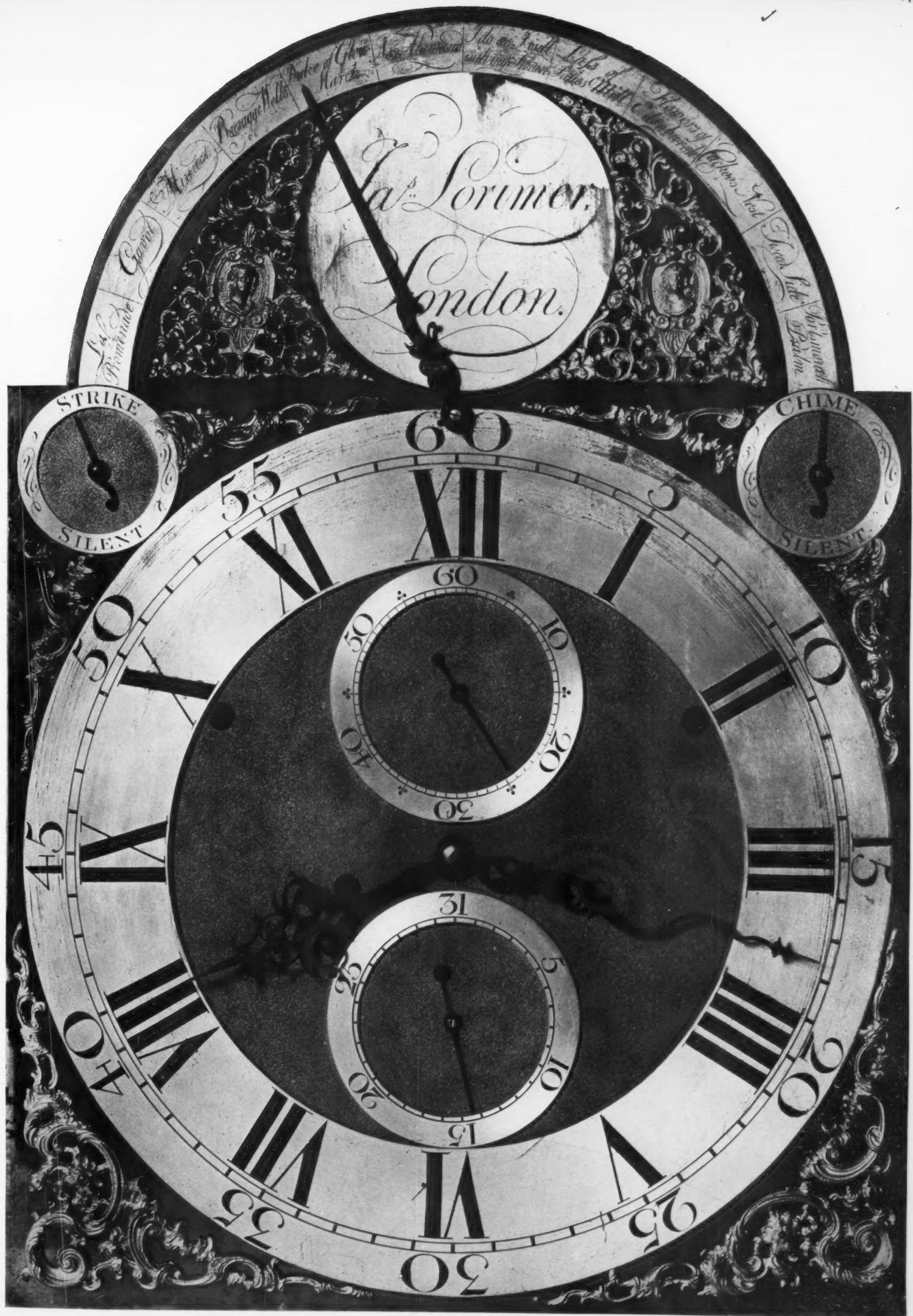
* * *

The National Book Council and the Authors' Society are to be congratulated on their astute book tokens scheme. One sends one's friend a token which he or she can present to the local bookseller in exchange for any book of the value indicated on the token. True the pretentious and the snobbish whose idea of a present is that it should appear to be worth more than was given for it will not be helped. But sensible honest folk like ourselves will welcome it as a real mitigation of the Christmas present difficulty, and it will no longer be necessary for a youngster of my acquaintance to push under all the bedroom doors a list of the books he doesn't want for Christmas—headed, I regret to say, by the entry—Holy Bibel!

* * *

Let no one henceforth sneer at the unresourcefulness of the British manufacturer. A correspondent sends me the charming little design illustrated here, and I have been so deeply moved by this workmanlike treatment of the national bourgeois emblem, that I am compelled to share my emotions with others. If the design of the containing vessel may be held by the hypercritical (and vulgar-minded) to be offensively derivative, no one can fail to admire the natural manner in which our old friend the aspidistra is embedded in its permanent home, the imaginative way in which the three major leaves are utilized, by the mere riveting of a neat hook, to carry the indispensable adjuncts of every progressive fireside, or the touch of genius which has made three other leaves thrust masterfully through the side of the pot and curve voluptuously downwards to form the feet—sheared short for sane practical reasons. Of course our illustration fails to give any adequate idea of the exquisite finish, but we can, I think, imagine the gleaming copper (or more sombre bronze artfully soiled in places to give character and variety) gaily reflecting the light from the dancing flames of the Yuletide fire.





AT CLOSE RANGE

T H E T R A D I T I O N A L C L O C K - F A C E

The clock face illustrated overleaf was made by James Lorimer, who was working in London about 1780. The best English clocks were, in those days, made in London, and Lorimer, though never particularly famous or a master of the Clockmaker's Company, was typical of the craftsmen who made these clocks, before the introduction of mass-produced articles, the most famous in the world.

The convenience and legibility of the clock face is immediately apparent. This is brought about by the superimposing of shining bands of silver or silver gilt on a dark background of matted brass in the centre and dull brass, relieved by applied bright chased brass moulds on the corners and on the circular pediment above the dial. Although the figures may not be large, the shining silver circles dominate the design and the minute, second and quarter circles leap into prominence, while all information about the chiming is conveyed on bands of silver overhead. Modern clock faces, as will be seen from the photographs in the following Craftsmanship Supplement, do not stress the figures themselves, and leave the background uniform. Such a practice on a clock face which gives as much information as Lorimer's, would produce a muddled effect.

Lorimer's clock is perhaps an elaborate example, and some idea of the intricacy of its movement will be gathered from the twelve airs, one of which the chiming apparatus plays at every fourth quarter throughout the day. The hands, too, though elaborately designed where they are against the dark background, straighten themselves out and perform their functions exactly as they approach the silver circle.

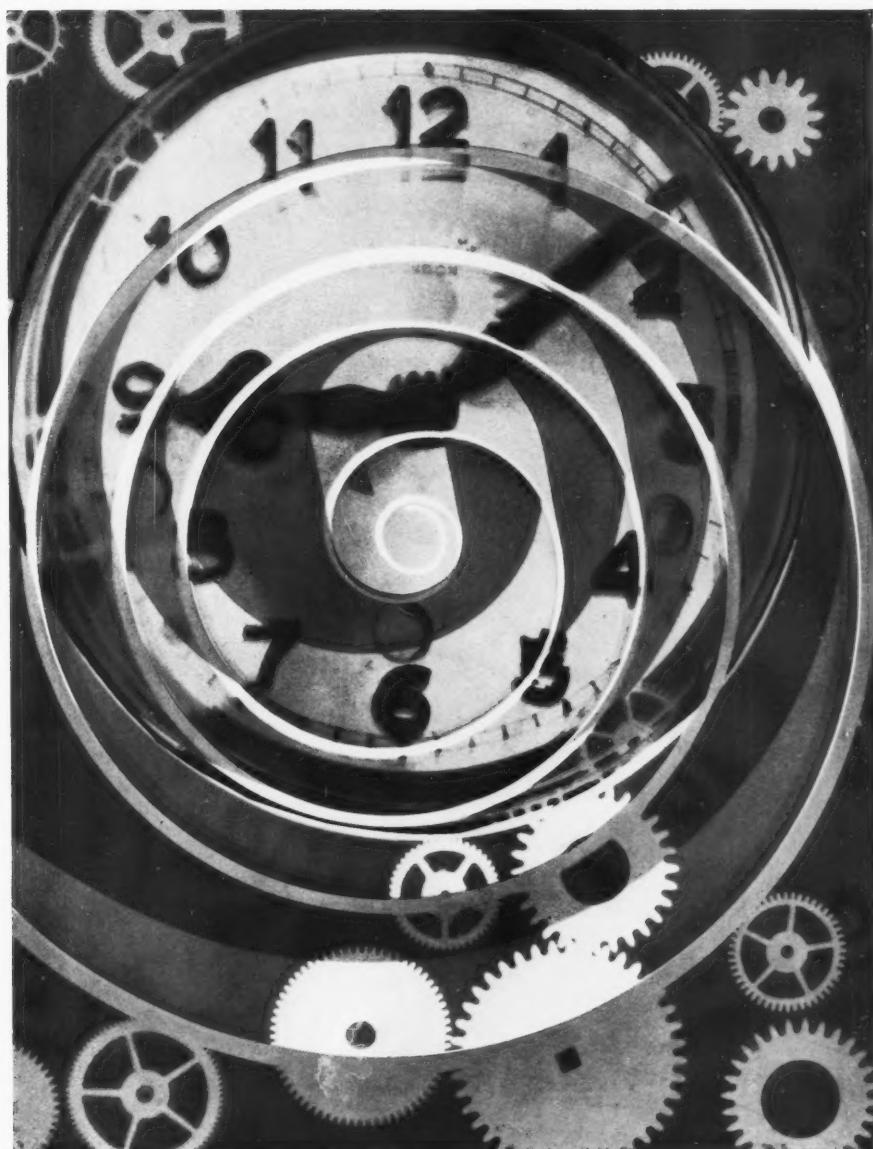
The clock face illustrated on the cover of this issue is another example of clarity of effect gained by contrasting materials. This was made by Henry Jones, who was master of the Clockmakers' Company in 1691, and who died in 1695.

Both clocks are from the famous collection of Mr. Malcolm Webster, through whose kindness they are reproduced.

PLATE iv

December 1932

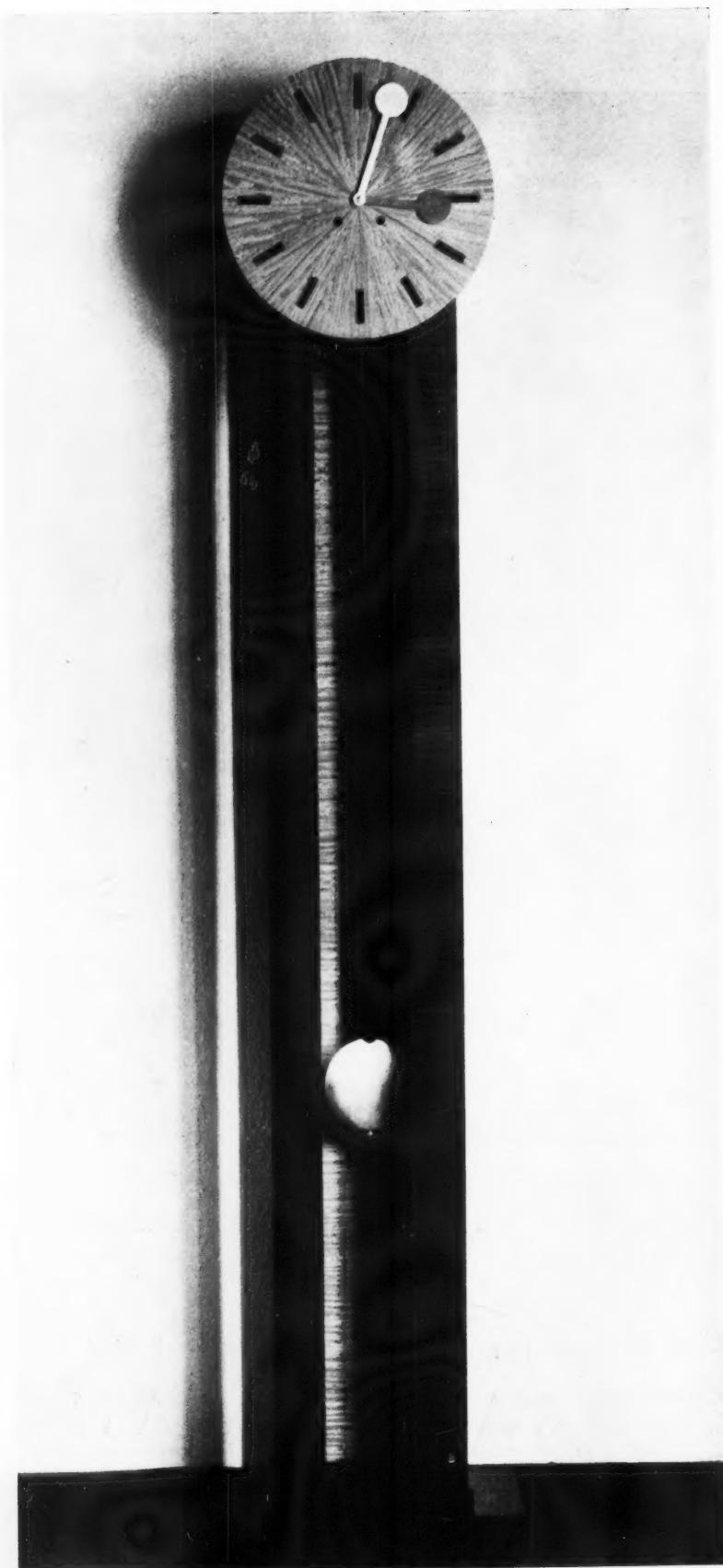
THE TIMEPIECE



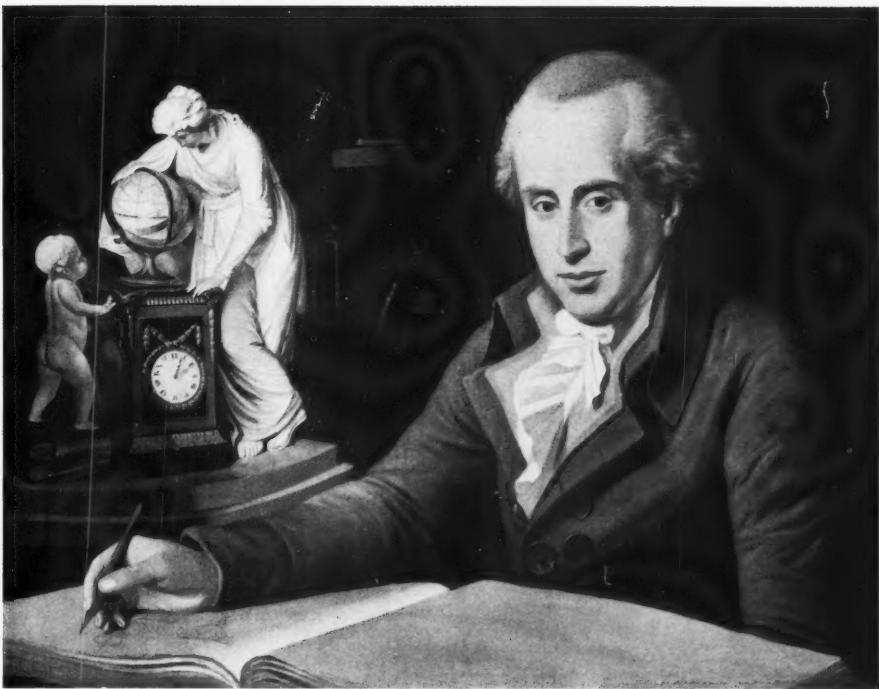
1. A composite design made up of a negative of a clock face, a photograph of a clock spring, and a photograph of the cog wheels of a watch enlarged. Designed by Adrian van der Horst for J. W. Benson, and exhibited at the Wertheim Galleries.

THE ARCHITECTURAL REVIEW
DECORATION AND
CRAFTSMANSHIP SUPPLEMENT

December 1932



2. A Swedish "reconventionalization" of the "grandfather clock" in birch and lemon-wood, designed by A. E. Hjorth, in which the pointing fingers of the hands are replaced by fists clenched like drum-sticks. *Autres temps, autres mœurs.* Boxing-gloves supersede the rapier ; "Hell, I must be off !" a languid "I see it is getting rather late."



3. BENJAMIN LEWIS VULLIAMY, born 1780, Master of The Worshipful Company of Clockmakers five times, and, next to Tompion, the most famous English clockmaker. Benjamin Lewis Vulliamy was the head of the family of Gothic Revival Architects of his name, Lewis who was born in 1791, and George who was born in 1813. It is clearly ridiculous to suppose, as the Builder's and Redgrave's dictionaries affirm, that Lewis was the son of Benjamin Lewis Vulliamy. (Reproduced by permission of The Worshipful Company of Clockmakers.)

Clocks and Faces

By Baird Dennison

IT is surely no accident that the country chiefly identified with the manufacture of timepieces should be Switzerland, or that those of its Cantons in which this industry is localized should be French, not German, in speech, and Calvinist, not Lutheran, in religion? Could a fitter symbol than the clock be found for the nicely balanced equilibrium of logic, clarity, precision and realism that constitutes the French genius? And does not the clock also symbolize the inhuman inexorability of a patently inequitable human predestination wholly at variance with Catholic doctrine, though perfectly in accord with Puritan dogma? Geneva would still be the spiritual home of chronometry had it never become the "home city" of *horlogerie*.

But Geneva had other claims to fame long before the League of Nations made it the politician's home from home. There Jean Jacques Rousseau first proclaimed that the voice of Demos was the voice of Jehovah. While democracy was fighting for life its slogan was "Sois mon frère ou je te tue!" Today, when the graves of millions who shed their blood that the world might be made safe for this literary nostrum are barely green, men are snatched from fraternizing over a glass of beer by the tocsin of "Time, please, gentlemen!" The striking of

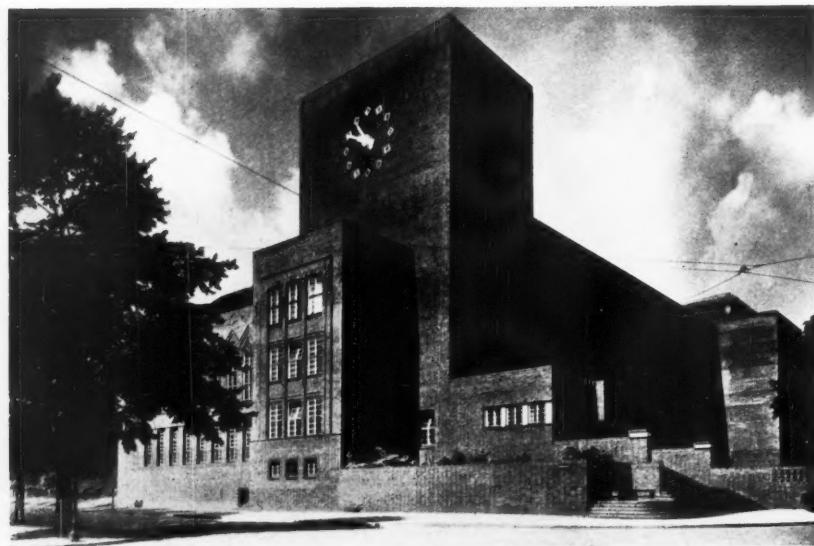
clocks has become the recognized "oyez!" for all the hundred-and-one peremptory "dos" and "donts" bureaucracy is for ever dinging into our ears. Time and Western man are continually being reminded of their practical interdependence and mystical synonymy.



Examples of REVOLVING DIALS WITH STATIONARY HANDS. 4 is an Empire design, from the French *Mobilier National*, based on an urn surmounting a column round which a serpent (the symbol of mortality and wisdom) is coiled, whose fangs serve as pointers to the numbered rim rotating beneath them. 5 and 6 are Empire examples of the REVOLVING ORB TYPES, the one Roman and the other Egyptian in inspiration. The former, which was designed by Lepaute, is at Fontainebleau; the latter is in the Louvre.

The deification of the dial began with the moralization of that vulgar, petty-shopkeeper axiom of the unhurrying Victorians: "Time is money." Now that we are getting poor as rapidly as they grew rich, we might be allowed to enjoy some of the half-forgotten sweets of the time-lag. But no! Where hours of labour are being reduced the resultant "leisure" is being organized as ruthlessly as piece-work, with an Argus eye on the same task-master—the clock. If we banish ticking from our homes it returns to us on the ether. There is no escape. We have become the slaves of the implacably moving hands on the wall. And to make matters worse, there are now two legal times. Thanks to Mr. Willett we are commanded to put our clocks forward an hour on one appointed date, and back an hour on another. But French peasants are not the only rebels against our anonymous clock-minded despots. I once drew an old country landlady's attention to the fact that her clock (the month being July) was an hour slow, only to be crushed with the retort, "We keep *God's* time here!" That phrase conjures up all the calm dawn-to-dusk spaciousness we have jettisoned in our race with a disembodied forefinger and thumb. In our naïvety we confuse time with speed, because we visualize both in terms of revolving wheels.

Time is the only thing in the modern world that is planned. The public clocks of most great cities are municipally synchronized. London's are not, so that there is sometimes a discrepancy of six to eight minutes between those in Kensington and Kennington. In spite of the fact that the whole world's time is



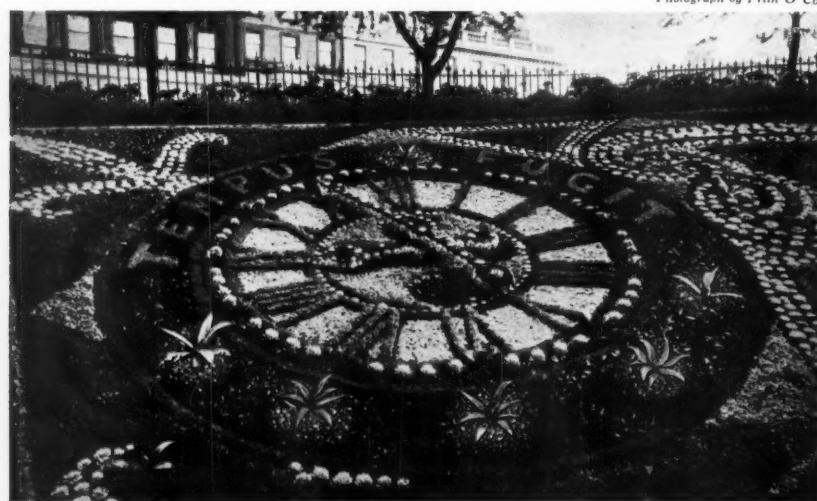
7. THE EPPENDORF MUNICIPAL GRAMMAR SCHOOL, HAMBURG. An example of a built-in clock as the focal architectural feature of an asymmetrical composition.

Architect : Fritz Höger.

co-ordinated by the meridian of Greenwich Observatory, and that Big Ben is the master-clock of its greatest empire, London has no standardized time, just as it has no key plan to condition its growth. The L.C.C., which so arbitrarily controls the hours within which a bun may be bought, cannot find time to bother itself about providing either.

"Clock," which originally meant bell, is a profoundly human word—a word associated with peals from belfries on holidays and days of public rejoicing. Yet to read in a newspaper that something happened "at three o'clock" does not evoke a chime, whereas to read in a ship's log that something happened at "three bells" does. The modern clock is becoming steadily de-

humanized. Rarely does it strike with the inviting tinkling of a bell. More often it is with the brutal sort of major clang that rises intermittently from out of the general ground-swell din of the factory. The clock as a household god, or a prop of the family-tree—one has only to think of those tall coffined "grandfather clocks," with pendulums swaying like benevolent old men's beards—is being superseded by the functional time-machine: impersonal and abstract as any of the other mechanisms to which we confide the regulation of our activities. Formerly watches kept their masters' time, correct or capricious, fast or slow, according to individual habits and temperaments. They were personal as pipes or portman-



8. THE FLOWER CLOCK IN PRINCES STREET GARDENS, EDINBURGH. A Victorian virtuosity which has eclipsed all the other "sights" of Scotland's capital. The fact that the horticultural ingenuity which produced this masterpiece of democratic art did not prefer to find expression in a floral galaxy of all the tartans has been attributed to the enlightening influence of popular education.

teaux are personal, reflecting their makers' and their owners' tastes. The manufacture and repair of what were for centuries the most delicate and complicated scientific instruments in common use engaged the highest skilled mechanical labour. Goldsmiths and silversmiths made the case worthy of the casket.

By the middle of the eighteenth century the clock had become assimilated to domestic furniture. Elegantly boxed in mahogany it occupied the middle of the mantelshelf, the focus of a handsome apartment's formal harmony. In public buildings it graced a belfry with a face to all four quarters of the compass, or filled the *ail-de-beau* of a tympanum. The empire style saw the zenith of the clock's magnificence. In France, where they had formerly been surrounded by stylized sun-rays, satellite beams that, like true couriers, refracted the central effulgence of the Roi Soleil in his solitary solar glory, dials were raised aloft by caryatides, or menaced by Father Time with his sweeping scythe. Nymphs supported them with floral chains; goddesses brooded pensively upon their function of measuring humanity's mortal span, chin on hand; Bacchus and Phœbus harnessed these speeding spheres as wheels of their chariots; heroes of the ancient world, gladiators, centurions and emperors, laid off shields and breastplates on their convenient pedestals. Mythology was ransacked for allegories. A whole armoury of trophies lent classical significance. Greek and Egyptian architectural motifs of consummate workmanship—porticos and architraves and consoles in marble, mahogany and gilt bronze—were lavished to dramatize their *décor*. The face was only pretext for the frame. Then came a spate of tortured alabaster and porcelain, "museum pieces" isolated under plush-fringed bell-jars. This was followed by the return to an often rather portly common sense, the best embodiment of which, the square glass and brass carriage clock, exposed its works like a conjurer to show there was no deception.

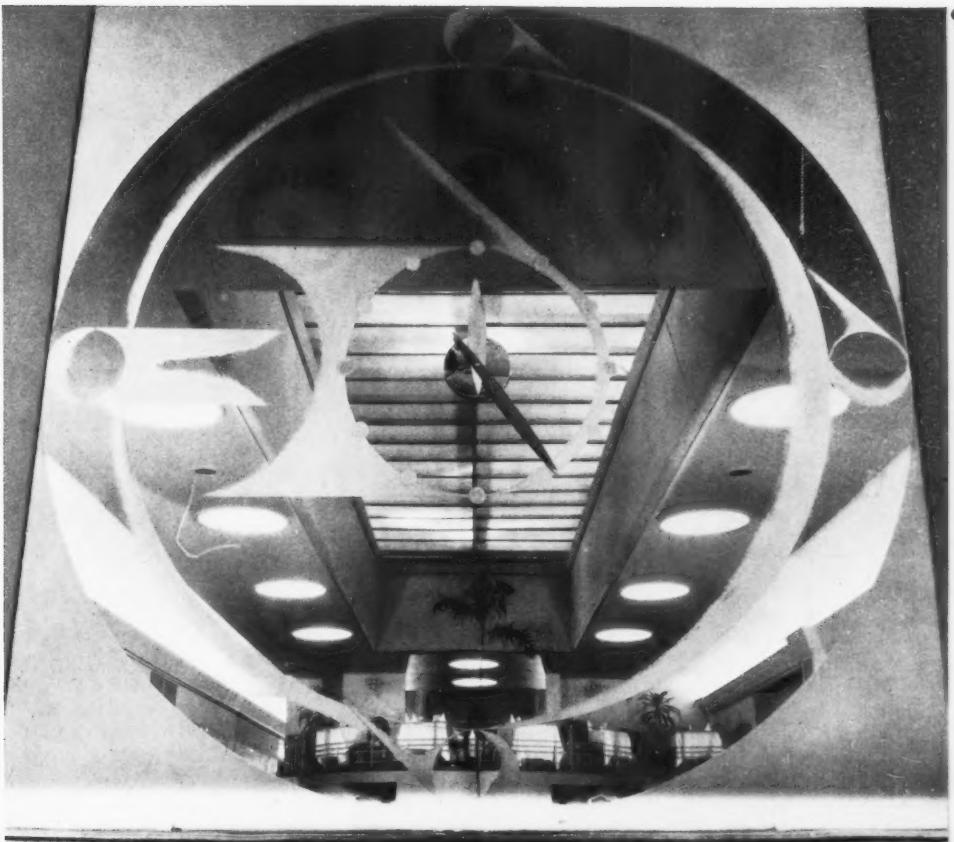
No wonder the "chronometer" was a precious heirloom, or that fussily punctilious and self-important persons were continually "referring" to watches that "never varied a minute" with a solemn pantomime of extraction, opening, examination, closing and replacement. Winding-up the family clock was a domestic ritual in which those male virtues that are based on "clockwork regularity" could be paraded.

But industrialism spelt the degradation as well as the generalization of the clock. Switzerland began to export dreadful little sentimental fretwork *chalets*, rewound by chains pulled up and down with iron fir-cones, in which china cuckoos billed and cooed the hours like mating turtle-doves. The first examples of mass-production in metal looked as if they had been made of old sardine-tins. That shoddily-helmeted sentinel, plebeian as a bum-bailiff in his bowler hat, the American alarm

9. Clock in the Restaurant of the EMBASSY CLUB, LONDON. The design represents the Midnight Sun. The dial is of mirror glass, the hands are polished aluminium and the numerals acid etched.

Architect : Raymond McGrath.

Craftsmen : For the glass, Pugh Brothers ; for the metal, The Cleveland Art Metal Works ; and for the clock mechanism, The Synchronome Company.

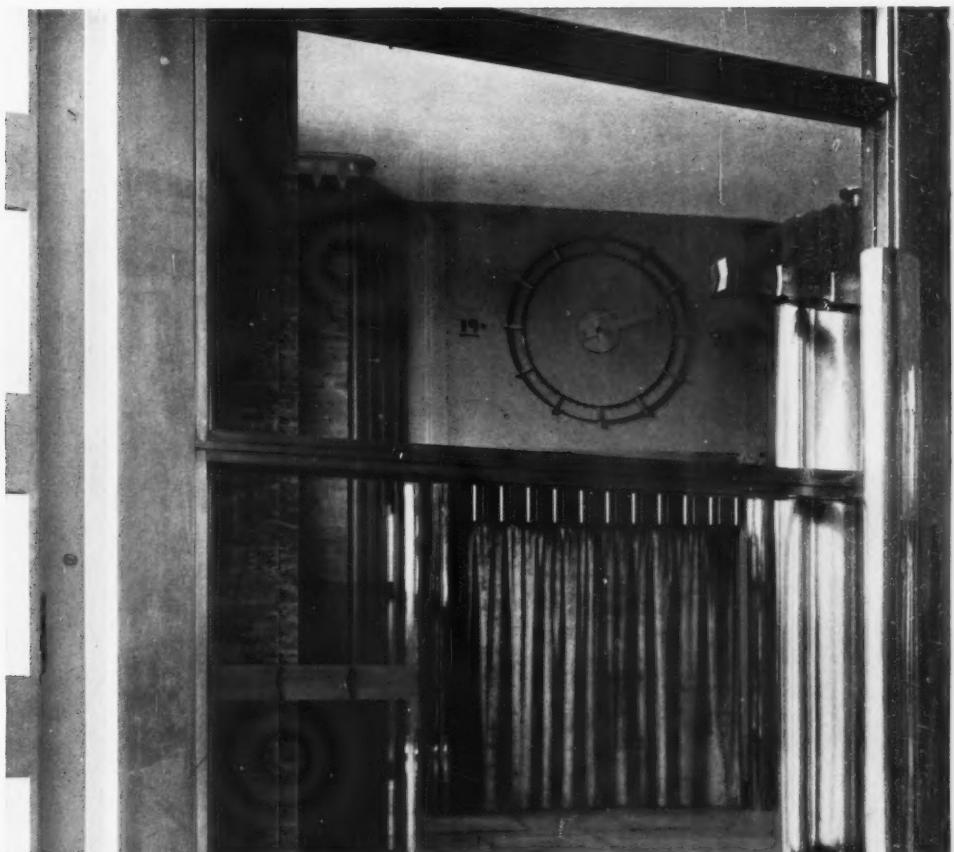


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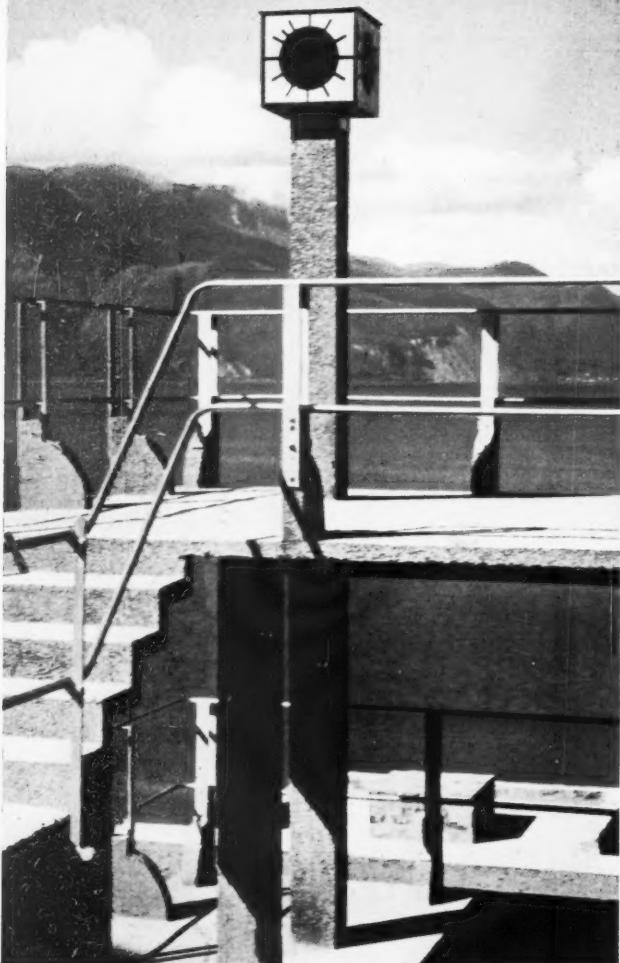
10. Clock in the Entrance Foyer at the SHAKESPEARE MEMORIAL THEATRE, STRATFORD-ON-AVON, constructed of aluminium and bronze. The hands, centre plate, outer ring and hour and minute indications are of aluminium. The inner ring and date are of bronze.

Architects : Scott, Chesterton and Shepherd.

Craftsmen : For the mechanism, Birch and Gaydon ; for the face, Comyn Ching and Company.



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11. The "Bathers' Clock" at the CORSEAUX "PLAGE," VEVEY, SWITZERLAND. A four-sized "conventionalized dial with a black centre mounted on a prolongation of a concrete stanchion. *Architect: Otto Zollinger.*

12. A neatly stylized columnar clock, faced with slabs of polished Ladoix stone, in THE SQUARE OUTSIDE VERSAILLES - CHANTIERS STATION. This design, though essentially modern, pays discreet homage to the classical, architectural splendours of Louis XIV's palace. The face and hands are of polished aluminium. *Architect: André Ventre.*

13. The north face of the clock in the main tower of the new SHELL-MEX BUILDING, THAMES EMBANKMENT, LONDON. The diameter over the cardinal points is 22 ft. 6 in., and the dial is contained in a 25 ft. square of Portland stone. The minute hand is 10 ft. 7 in., and the hour hand is 8 ft. long. The markings on the face consist of tapered castings of antimonial lead secured by lugs to the stonework, the cardinal points being emphasized by means of lozenge-shaped castings. The hands are of metal, specially formed to resist the greatest wind pressures. The clock itself is operated by weight, automatically electrically driven and controlled by an electric synchronome master clock. It is the first clock of its type of such dimensions. *Architects: Messrs. Joseph. Craftsmen: For the clock hands and mechanism, Gillett and Johnson.*

14. The new SHELL-MEX BUILDING from Temple Gardens.

15. A clock at NO. 41 GLOUCESTER SQUARE, LONDON. The clock face is of metal, painted cream to match the walls, and the applied numerals are chromium plated. *Architect: Serge Chermayeff.*

Craftsmen: J. B. Beardmore and Company.

16. The clock in the hall of GAYFERE HOUSE, LONDON, is sunk flush with the wall face. Its surround consists of plates of peach tinted mirror plate, which was sent to Orrefors in Sweden for engraving the Zodiac signs. The dial face is of white acidized plate glass, overlapping the surround, and illuminated from the back. *Architect: Oliver Hill.*

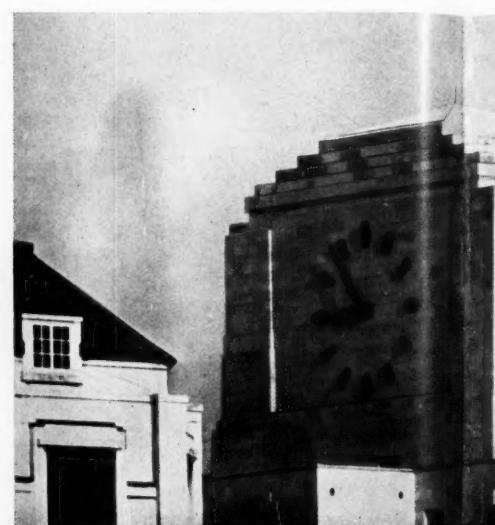
Craftsmen: Glass fabricated by The London Sandblast Company; electric mechanism by Bulle.

17. The clock on the service screen in the ground floor refreshment room of the SHAKESPEARE MEMORIAL THEATRE, STRATFORD-ON-AVON. The numerals and hands are of white wood. *Architects: Scott, Chesterton and Shepherd.*

Craftsmen: For the mechanism, Birch and Gaydon.



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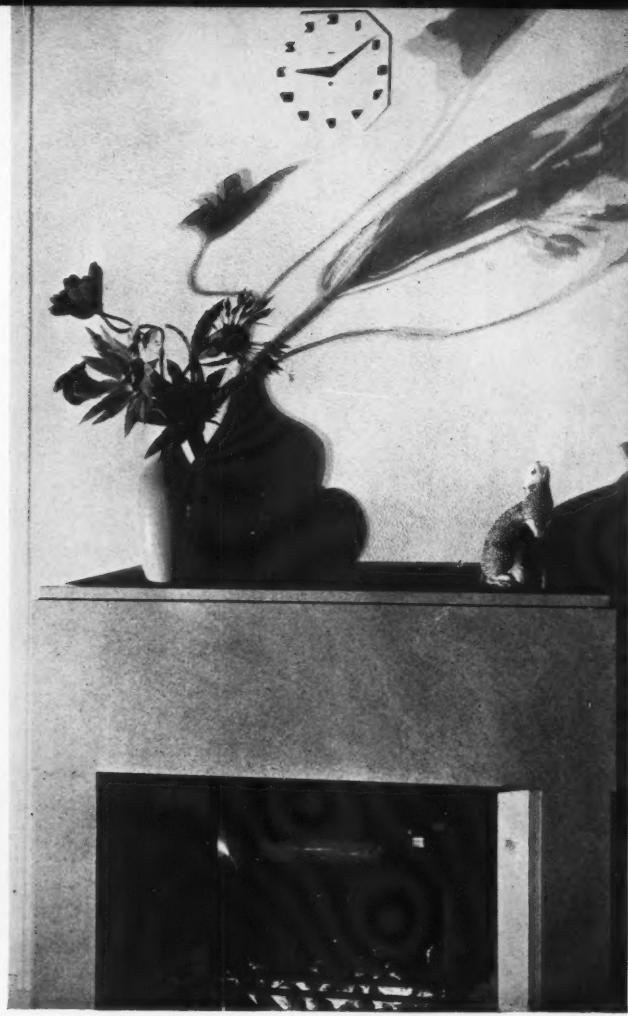
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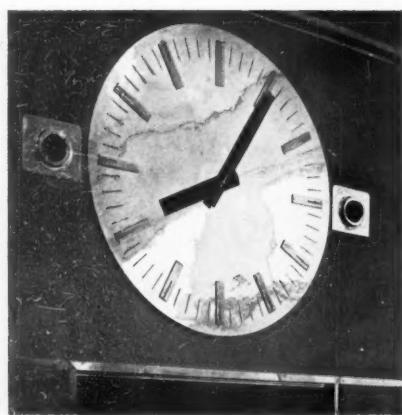


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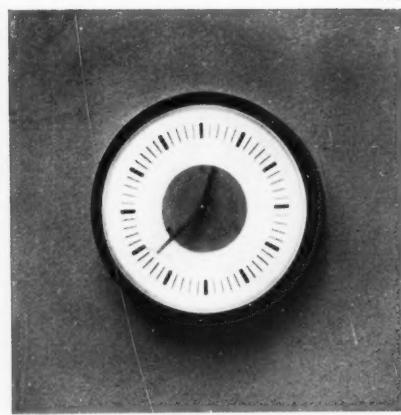


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18. The clock at the FECHENHEIM MUNICIPAL BATHS, FRANKFURT-ON - MAIN has an asymmetrically-placed conventionalized dial as the solitary decorative note of a severely functional interior.

Architect: Martin Elsaesser.

19. A three-foot polished stainless steel clock-dial in STUDIO 8A, BROADCASTING HOUSE, LONDON. The hands are matt black, the hour markings are applied and finished anodized copper, the minute markings being engraved and wax filled. The dial is fixed direct to the building board; on either side are signal lights and below an observation window. This illustration and Nos. 21 and 22 are reproduced by permission of the British Broadcasting Corporation.

Architect of the clock: Serge Chermayeff.
Craftsmen: Clock face by James Gibbons; mechanism by The Synchronome Company.

20. The illuminated clock at NO. 1, KENSINGTON PALACE GARDENS, LONDON. The clock face is in plate glass, fine sandblasted all over; the divisions are deep sandblasted and filled with black wax. The frame is in ebonized hardwood. The clock face is illuminated by four finger lamps.

Architect: Well Coates.

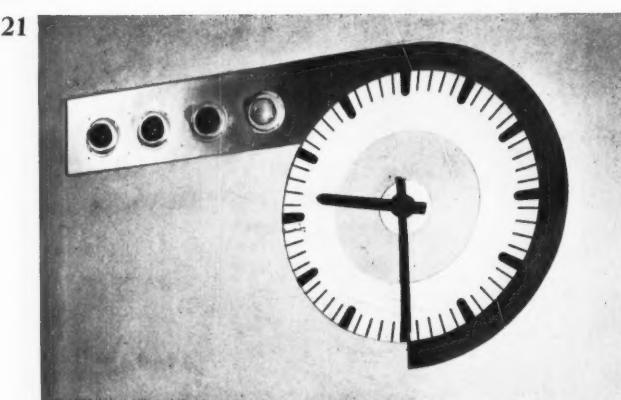
Craftsmen: Galliers.

21. The clock in STUDIO B.A., BROADCASTING HOUSE, LONDON, combined with signal lights. The clock face is constructed of a yellow composition resin board to which the markings of the same material are cemented.

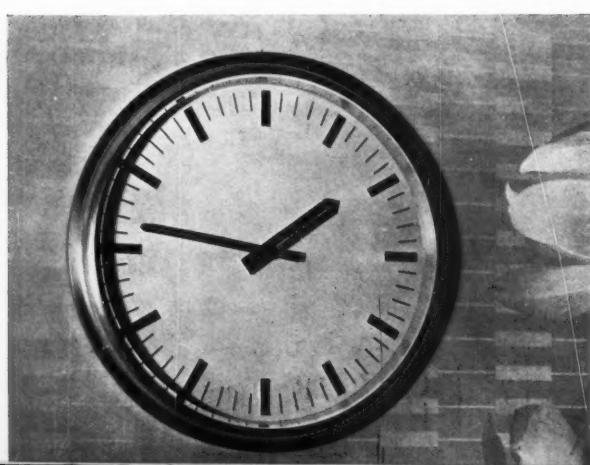
Architect: Raymond McGrath.
Craftsmen: Clock face by Trollope and Sons; mechanism by The Synchronome Company.

22. The standard 10 in. clock used throughout the listening and silence rooms in BROADCASTING HOUSE. The face is matt white. The hands are matt black with a thin line of white.

Architect: Raymond McGrath.
Craftsmen: The Synchronome Company.



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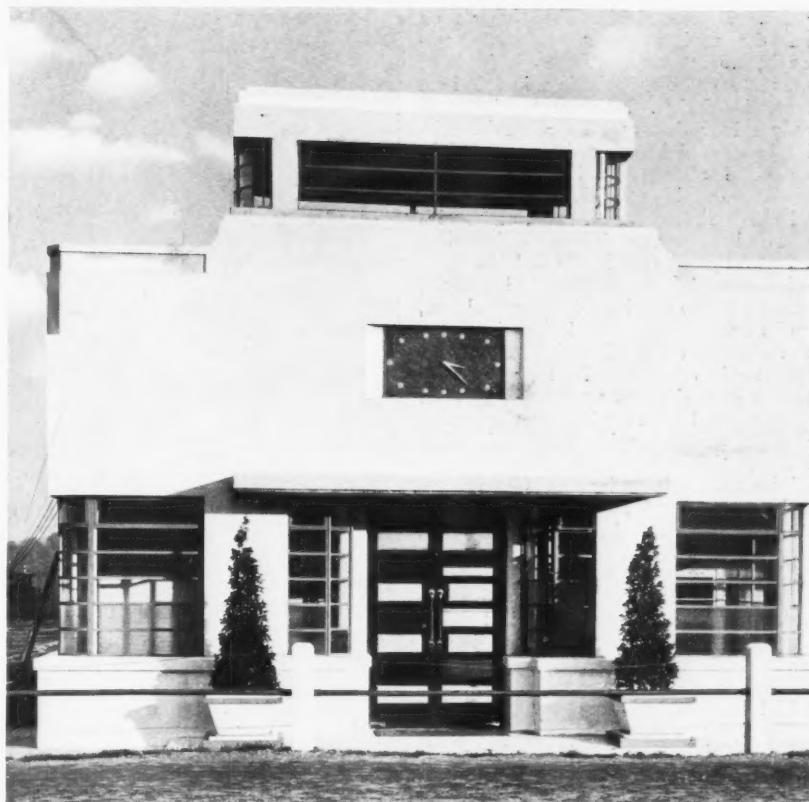


clock, brought the factory syren into every workman's home and servant's bedroom with its machine-gun reveille.

Mass-production has changed our whole attitude to clocks and watches. When they ceased to be among the most precious of human possessions we ceased to feel any mystery or sentiment about them. To-day they are still the last things we think of pawning, but for a different reason—we know they would fetch so little! Only aldermen who court being photographed in their civic robes continue to be "presented" with "marble time-pieces" or "solid gold watches" as "modest tokens of esteem and respect." We are surfeited with automatic dials—pressure-gauges, speed-indicators, voltage meters and what not. That once-fascinating toy, the self-winder, is as self-evident to our children as a motor-car's self-starter. Hunters and "half-hunters" are already meaningless terms. The "massive gold Albert," pompously looped back through a waistcoat buttonhole, or festooned like a swag from pocket to pocket, has become a plain leather band strapped to our wrist. And instead of periodically removing a watch from a chamois-lined pouch to "consult" it for an unconscious parody of the schoolmaster's "I give you just two minutes, Jones minor!", we take an occasional rapid "glance" at it. The change in vocabulary is significant of our changed mentality. To *consult* implies contemplation combined with cogitation; to *glance* the most cursory look to see whether we are holding our own with what used so properly to be called "the enemy." In an age in which it is as easy to renew the parts of a watch anywhere in the world as it is to replace those of a standard make of motor-car or type writer, even the possessors of aristocratic "Longines" as thin as half-crowns are never known to "display" them.

Eight-day "period" clocks are now being superseded by dummies controlled by a master-clock on the switchboard of a power-station. In return for an addition to our electric-light bills of the infinitesimal amount of current they consume we are relieved of all active responsibility and guaranteed chronometrical accuracy. The electrician has stepped into the clock-maker's shoes. From being an individual "class-conscious" piece of domestic furniture that was part of ourselves the clock is in process of becoming a standardized "Massenmensch" household fitment, like a tap or an electric-light switch; and as inescapable as its fellow-tyrant the telephone. Now that we can afford a synchronized clock in every room, "masters of the house" are no longer able to acquire merit by putting right the drawing-room clock daily by the dining-room's, and both weekly by the post office or station. The suspicious inaccuracy of the kitchen clock compared with the scrupulous exactitude of that in the study will cease to afford a topic for stop-gap conversation at meals.

Almost contemporaneously with the electric clock, the "conventionalized dial"



23. The water tower of a NEW FACTORY AT ENFIELD. The dial of the clock is composed of a recessed panel in the main wall of the tower, and is formed of a rendering on the brickwork of colourcrete, crystals of ruby glass, and small pieces of broken mirror. The latter two ingredients were applied after the colourcrete had been put up. The "numerals" are the ordinary road sign reflectors, 2 in. in diameter. These reflectors are illuminated by the floodlights at night. The synchronized mechanism of the clock is housed behind the tower wall.

Architect: Donald Hamilton.

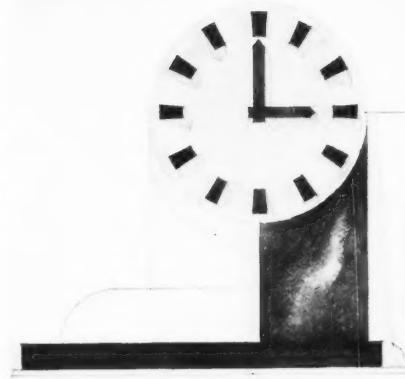
appeared—which, as might be expected, is one of those typically Teutonic complications that are intended to simplify our life by making us take more thought today in order to take less tomorrow. This is one of the most interesting manifestations of the Modern Spirit. The reason why Roman numerals, which have almost entirely disappeared from front-doors, still predominate on clock faces is probably that, like the dial's circle, they are purely geometrical in form. More of them than not consist of truncated radii projected from the same centre as that round which the two hands revolve. Though based on combinations of only three ciphers—I, V (which, in its inverted position, could hardly be bettered as a pointer to the variable angle between the moving hands) and X—the cycle of I-XII produces a crowded and rather unbalanced-looking face that is confusing to read from a distance. Whereas the first quarter, XII-III, is fairly well spaced, and shows sufficient blank between the figures, the opposite quarter, VI-IX, bristles with serried rows of upright and diagonal strokes like a stockade. Though Arabic numeration has the advantage of providing nine self-contained ciphers instead of three, all except 1, 4, 7 are curvilinear, or combinations of curves and straight lines. They do not look right

on a circular face because they lack proper relation to its axis. The more ornate or picturesque their character—and, unlike Roman numerals, Arabic lend themselves to the most arbitrary "artistic" treatment—the more geometrically amorphous is their appearance. There is nearly always something self-consciously *art-nouveau* or "olde-world" about what copy-books call their pot-hooks and hangers. It is obvious that any attempt to ornament the face or hands of a clock is bound to impair its legibility; and that as a plain circle is the logical shape for the former, there should ordinarily be no tolerance of squares, lozenges or polygons. Only too many ambitiously architectural public clocks are sinners against sense for sensibility's soft sweet sake.

In the conventionalized dial the twelve numerals are represented by as many identical, plain, black or white, dots or unscrifed strokes. This may look monotonous, or "ugly" (i.e., unfamiliar), but it undoubtedly increases visibility. Usually the hands are flat bars of uniform thickness with blunt ends: the object being to connect the hour and minute hands by a firmly outlined angle. The provision of separate minute strokes and a defined circumference is, for once, a matter of "individual" taste. As yet the numberless dial is little more than a blue

print. Beyond ringing the changes on all the indisputably "modern" materials, no attempt seems to have been made to embody its basic principle in a formative design. At present white is the only colour that can be rendered self-luminous at night, otherwise variety might be obtained by making the number strokes one colour and the hands another. Clocks do indeed exist that dispense with dials altogether, and record the time minute by minute like a kaleidoscopic calendar. These modern clepsydras, though they sometimes interest children, make no appeal to adult imaginations; and an appeal to our imagination is what, consciously or unconsciously, we always expect from the appearance of a symbol.

The usual explanation or the emergence of the conventionalized dial is that it was the indirect outcome of the adoption of the 24-hour day by the Continental railways. Certainly the amalgamated A.M. and P.M. dials, with their double sets of numerals and sometimes dual pairs of hands, were incredibly clumsy and bewildering. But the direct creative impulse may have been psychological rather than practical. Like the suppression of capitals in printing and typing, and the manufacture of new nouns from the initial letters of groups of names, it was probably the child of what certain French writers have called "the revolt from the word": a spontaneous movement which manifests itself in the fetishism for neo-mystical hieroglyphics. Political slogans are giving place to political symbols: the sickle and hammer of Communism, the lictor's axe and rods of the Fascisti, the Zionists' Shield of Judah, Hitler's anti-Semitic swastika, and the three speeding arrows of the Reichsbanner-men. Within a few years we may find every staunch Conservative wearing an enamel primrose on the lapel of his coat. Everywhere the forms of speech are being contracted, for a word costs a second in the currency of time. The



24. A DESIGN FOR A CLOCK. The clock face is in lemon yellow enamel. The base and half the case is ebony, the other half being in chromium plated polished steel.

Designers: The Junit Manufacturing Company.

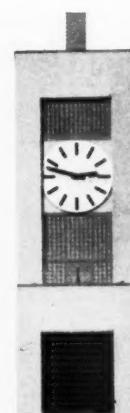
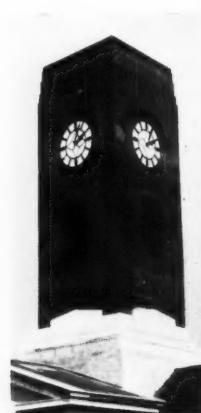
titles of officials, public bodies and large companies have become too long to repeat in full, so we write their initials instead, just as we spell them out in speaking. "*Underground*" is a simple example of this new morphology, for what we look out for when we seek that sign is not the intervening minuscules but its Alpha and Omega. If only "Ud" were an easier syllable we should call it that as naturally as we clip *omnibus* into "bus." Berliners always speak of the "U-Bahn," and a huge white letter "U" on a blue glass ground is the only surface indication of the entrance to a Berlin tube station.

The—or rather some sort of—conventionalized dial has come to stay. On the Continent it has already become generalized under official patronage. Even individualist France has capitulated, if only to remain *à l'affût de la mode*. Here in England—where one might risk a pretty substantial wager that the 24-hour day has as little chance of ever being adopted as the metric system—it has now

made a belated out-of-doors appearance on the new "Daily Telegraph" offices and the summit of the Shell-Mex building. Indoor examples can be found in Broadcasting House.

But the conventionalized dial needs humanizing as well as formalizing, for humanity is weary of the hidebound realism of arithmetic. It feels it is ripe and old enough for the metaphors of algebra—an algebra based on something less literal and more soul-satisfying than x and y , π and ρ . It wants brave new symbols for old that are brave no longer. Those bald strokes in lieu of numbered hours are like the chalked inscriptions Balzac used to scribble across the bare walls of the house he could not afford to furnish: "*Ici un tapis de Perse!*" Beggarly negations, transparently threadbare substitutes for genuine invention, they cannot be suffered to remain unless we have definitely lost the power of creating what we know we need.

In Vienna there is a model municipal kindergarten for children too young to read their own names where each child has a locker in which to keep its own stool, brush, comb, mug, towel, slippers, etc. All these articles are marked with a coloured symbol—usually a simply stylized flower—that differs for each child. Aided, it must be admitted, by their instinctively uncommunistic sense of *meum* and *tuum*, this device teaches the children to know their own property much sooner than if it was stamped with their names. In other words *designed* symbols are remembered where accidental alphabetic ones are not. This may, perhaps, point the way to the evolution of a new and more natural, norm. The old numbered clock-face is clearly doomed. But some change in the dial of its "conventionalized" successor there must be; for without ciphers that are less blankly negative makeshifts for numbers than those unvarying full-stops and letter "1's, children cannot be taught to tell the time.



Photograph by Aerofilms.

25. THE SEACOMBE FERRY TOWER. The dials of the clock are constructed of heavy section cast iron to withstand the high winds blowing from the Mersey estuary, and glazed with thick opal glass for interior illumination. The Tower was designed by the Wallace Corporation Architect's Department, but the whole of the clock installation was prepared to the designs of Messrs. John Smith & Sons and approved by the same department. 26. An air view of the CLOCK AT HESTON AIRPORT. The face is a brick ramp raised 10 inches above the ground and is 27 feet wide, cement plastered and painted black. The numbers are painted in white. The hands are light sheet metal painted white. Architect: Nigel Norman. 27. The Belfry of the "functional" Roman Catholic CHURCH AT VRSOVICE, PRAGUE. A typical "conventionalized dial" surmounted by a concrete cross as the finial of a vertical design. Architect: Joseph Gočár.

CORRESPONDENCE

Sir Reginald Blomfield
and The
Architectural Review

The Editor,
THE ARCHITECTURAL REVIEW.

SIR,

The interesting account given in Sir Reginald Blomfield's recently published book, *The Memoirs of an Architect* (pages 103 and 104), of the formation of the Advisory Committee of THE ARCHITECTURAL REVIEW and its work and final dissolution gives me an opportunity I have often wanted to record a sense of gratitude to all the members of that eminent group of architects for the great work they have accomplished. They were : John Belcher, Reginald Blomfield, Frank Baggalay, Gerald Horsley, W. Millard, Mervyn Macartney, E. J. May, Ernest Newton, E. S. Prior, Halsey Ricardo, Leonard Stokes, Norman Shaw. D. S. McColl was appointed editor at the request of the Committee. I had a seat on the Committee as representing the proprietors.

At the same time, in view of Sir Mervyn Macartney's death, I ought not to let pass without comment the phrase of Sir Reginald Blomfield's in which he complains that the subsequent passing of the editorship to Macartney was giving the REVIEW over to commercialism. It is, I venture to say, untrue to stigmatize a man like Macartney as a representative of commercialism. The facts are these :—

As the older members of the profession may remember, THE ARCHITECTURAL REVIEW was started about 1890 (Walter Crane designed its first cover) and soon after the first year of its existence it was bought by a concern called "Professional and Trade Papers, Ltd.," a too ambitious company which finally failed for a sum of about £70,000. This occurred in the year 1899. In 1900 a small syndicate, of which Lord Rothermere was the chief and most powerful member, bought the properties out of bankruptcy, and carried them on under the title of "Technical Journals, Ltd.," of which I had the honour to be the first managing director. This company exists today, though with few of its original members, the only alteration being a change of name to *The Architectural Press*.

The scheme in mind of the syndicate was the formation of a powerful concern which would purchase, as the occasions served, a large group of professional and trade papers. In addition to THE ARCHITECTURAL REVIEW and *The Architects' Journal* they owned *Specification*, an illustrated Medical Paper, a paper dealing with Etchings, and another with Furniture and Decoration.

It may perhaps be imagined that between the brilliant and enterprising newspaper men on the one hand and, on the other, the Advisory Committee of THE ARCHITECTURAL REVIEW—cultured artists who had nothing in common with the business world—I often found myself between the devil and the deep sea. I freely confess that I regarded myself as a business man, but the REVIEW committee revealed new motives and visions so that the meetings of the proprietors gradually turned into battles between the aims of the newspaper world on the one hand, and what I will call the new vision on the other.

Everything mentioned by Sir Reginald Blomfield in his remarks about the Committee and its final dissolution is exact, but it cannot be properly understood without a revelation of the fight, of which I was the unfortunate centre, proceeding between enterprising com-

mercialism and the spirit emanating from the Advisory Committee. The time came when the proprietors seemed determined to discontinue publication, and an appointment of a new editor was the only means one could find of overcoming their attitude. Either the Committee or the REVIEW had to go, and the decision I made has, I submit, been vindicated by the paper's subsequent history. The old proprietors gradually fell out, and under Macartney's fine editorship the REVIEW served one cause and one cause only—the profession of architecture. Although for twenty years after the new editorship it made very heavy losses, it was kept going, because we thought it was something worth doing, and the result is proof that we were right. But I venture to think not even Sir Reginald would consider this a good commercial policy.

If a final word may be permitted, I would like to say that our attitude was due in some degree to Sir Reginald himself. At the REVIEW lunches which he describes, I always made a point, if I could, of finding a seat by him, and it was due to the influence which, possibly quite unwittingly, he exercised upon me during this extraordinarily interesting period, that I began to realize there was something better than making a commercial success of the REVIEW. Visions of an immense organization of technical papers faded before the idea of doing something that would really serve architecture.

I am,
Your obedient servant,
PERCY HASTINGS.

The Manor House,
Earnley, Sussex.

A Publisher's Candid Opinion of the British Public

The Editor,
THE ARCHITECTURAL REVIEW.

SIR,

Mr. Gordon Craig's vivacious and provocative review in your September issue of Mr. A. K. Wickham's *Villages of England* raises a number of points which it may not be altogether without interest to your readers to examine. It is curious that while Mr. Craig gauges the British public's attitude towards the theatre with a cynicism born of long and disillusioning experience, his is a touchingly optimistic conception of that same public's reaction to good, sound, cheap books on what are called "art subjects"—if only such a commodity could be produced for it. Let me assure him that he can shed his illusions about books with his illusions about the theatre ; the two cases form a close parallel, however much they may differ in extent or degree. The undeniable fact is that in general the population of this island is neither a book-loving nor a book-reading one—nor does it want to be.*

Mr. Craig's *Puzzles Two and Three* are really one. The German or French publisher can undoubtedly reckon on the definite support of a reasonably cultured five-figure public for a sound illustrated book on, say, Architecture or some similar subject. It is a public which has no English (or English-speaking) counterpart. Let Mr. Craig try financing in this country, for example, a great book on the Acropolis and its Temples, such as that of Maxime Collignon, issued in three volumes at £6 apiece—and see the result. The French

*EDITOR'S NOTE.—It might interest Mr. Batsford to know that in Ireland the payment per head for books is a shilling a year.

can manage this ; for us it would be a slippery slide towards bankruptcy. Mr. Craig may say this is a special case, for he has probably heard some rumour of the British architect's capacity as a book-buyer. The fact remains that forty years ago the late Emile Lévy, most enterprising and able of French art publishers, loved to tell my uncles that he could sell his fine books anywhere in Europe except Greece—and England. His nephew would probably confirm this statement today.

It is a fact that the idea of selling 100,000 copies each of a Blue Book series (similar to that in Germany published by Langewiesche) at five shillings a volume is, one fears, a visionary and chimerical dream. There is an appreciative (if somewhat nebulous) public, modest in numbers, for such a book as Mr. Wickham's, which has been a very successful one of its kind. To publish a similar but slightly less comprehensive work on the same subject at five shillings, it would be necessary to print ten times as many, and in my experience you are unlikely to dispose of anything like that number. Incidentally, Mr. Craig's question about German lending libraries is indeed pertinent. The "library complex" is all too universal here. "I must put it on my library list" is generally the ultimate expression of interest, even among people of large means. And don't let us forget the hampering indifference of the English public and definite opposition of the English booksellers to anything not issued in a cloth-bound form.

The lack of public demand for books is apparent in the many square miles of working and middle class districts in our big towns where no bookshop can find a footing (in this respect I have often thought it would be rather fun if churches and settlements were to run secondhand book counters, and retail all sorts of literature for a few pence ; it would at least be an interesting experiment). But let us leave the millions whose recreative horizon is bounded by the cinema and the football grandstand, and take a stratum with some pretensions to education and culture. As I write in my study in a not entirely unattractive north-western district I know of only one household near by where I can go to find any ordinary art reference book—and that belongs to one of our authors. The average well-to-do young couple rejoices in its six-cylinder Coverground, its six-valve hundred-station-getter, its roaring electric gramophone ; its library will usually consist of two rows of standard and current fiction—more current than standard. But the parlous state of English book-reading has been depicted convincingly, wittily and unansweredly in an article by Mr. Ford Madox Ford, *Sooner than be Idle* . . ., a title which refers to the writer's (imaginary?) Aunt Eliza, who typified the nation in her slogan, "Sooner than be Idle I'd Take a Book and Read." *Nash's Magazine*, December, 1927. (She never did, of course.) Mr. Gordon Craig should digest this indictment by an experienced man of letters ; he will find in it a few of the figures and statistics which his inquiring mind demands. Mr. Ford contrasts the proportion of first-class bookshops in London, one for every 500,000 people, with that in Avignon, where there is one for every 24,000. I cannot forbear quoting his final summing-up. "It seems to me," he writes, "that a nation that has in comparison with other nations, no bookshops, whose purchases of books grows year by year more negligible (see the publishers' trade paper), whose society never mentions books in private conversation, whose popular press never reviews books and appears to be compiled by persons who have never read a book, whose State classes its writers alongside vagabond users of the road in the matter of national utility,

CORRESPONDENCE

whose political agents are pained to think that their constituents should include writers, whose public education, the most costly in the world, yet leaves its suppliants completely unread—such a nation, whatever its merits in the fields of business, finance and sport, cannot be called a nation of book-lovers."

The fact is that most English people offer a remarkably high degree of what the Americans call "Sales Resistance" to book-buying (Mr. Stanley Unwin has written some trenchant words in this connection in *The Truth About Publishing*). A publisher friend told me with grim amusement of the annoyance of his wealthiest acquaintance at having actually to expend 7s. 6d. on his firm's most popular novel, after exhausting every effort to cadge or borrow a copy. During the war, I proudly and tactlessly showed my chief, now an admiral, a new book on English Medieval Woodwork which we had published (now in its third impression). He said: "This sort of stuff means nothing to me; what is the price?" When I told him he remarked: "You must be b—y rich, Batsford." Probably he frequently spent five times as much on a luncheon party. And don't let us forget the eminent ex-Cabinet Minister who, if fond of tinkering with a trowel, has, I am told, complacently and publicly announced his entire ignorance of the art of Architecture.

I am glad that Mr. Ford took a jab at our educational system. It came to my knowledge that, after their quite mild salary reduction, a substantial body of teachers, boiling with indignation, registered a sort of mutual vow never to buy any more of the books that might have aided them in their work, till the cuts were restored. They do not represent more than a fraction of a doubtless cultured, altruistic and selflessly patriotic profession, but their action is noteworthy. Books are the first item selected for annihilation. The visits to the movies, the week-end trips to Cologne, and those cosy little dinners in Soho can continue. The pleasures of the spirit and the fulfilment of the vocation must be sacrificed, if sacrifice is to be made; and books, so far from providing an indispensable stimulus, are considered an egregious extra. They would cheerfully commit intellectual *hari-kari* out of pique.

It is curious—pathetic if you like—that a free-lance prophet like Mr. Gordon Craig should clamour (can we believe seriously?) for such governmental expedients as censuses, statistics and the filling-in of forms in his endeavour to track down the coy and retiring book-buyer. He seems to feel vaguely that the species needs a deal of digging out. I can suggest to him one or two more effective, if rough-and-ready, methods of discovering something of the proportion of the book-buying public. Let Mr. Craig select any good cheap series on art and architecture and peddle it from door to door in a good-class neighbourhood; he will enjoy some entertaining experiences. I have an unbounded admiration for the book canvasser. One provincial manager of a large firm said to an agent who had been complaining of his frequent snubs: "Well, really, Mr. X, I cannot understand your attitude at all. I was long on the road myself. Often I was kicked downstairs, and three times I was thrown out of the window. But I was never snubbed."

I have done a little probing (of the kind I would suggest to Mr. Craig) myself. I remember calling on the sole bookseller in a Midland town, where the very intelligent lady in charge assured me that of their 35,000 inhabitants, she doubted whether more than 1,000 ever opened a book, unless it was a sixpenny novel. I went on to the county

The Architectural Review, December 1932.

town, of 300,000 population. The few booksellers, all of them keenly interested and good triers, are skulking in back streets. Their meagre support does not run to large plate-glass frontages in main thoroughfares. Largely in the provinces, booksellers of decent standing have to extend their business to include the sale of stationery, newspapers, articles in "fancy leather," silver-backed hair-brushes, photographs of Gladys Cooper and the like to get any return at all for their labours.

Let us contrast present conditions with those in the eighteenth century, when there was at least no lack of cultured patronage for the profuse and extravagant productions of the period, and the word "amateur" had a real significance of its own. A rich man was proud to subscribe throughout his lifetime to successive folios of designs. Put it down much or little to the standard of the publications as you like, but there is no doubt that some influence was apparent in a rarefaction of taste and perhaps the highest refinement of design and craftsmanship ever attained in this country. Nowadays this culture and active, enquiring enthusiasm are replaced by a thin veneer of costly but futile education, and "taste" too often wanders aimlessly between a rather feminine and creamy appreciation of freakish trifles (surely we are all getting rather tired of hearing of the deliciousness of this or that enormity of the Gothic Revival) and a voguish, fashion-plate modernity that cramps spirited creation. Meanwhile, all the political parties in a frenzy of bureaucratic parasitism are working to turn England into a vast, drab-grey suburb. This official Tottenhamization proceeds apace; the term is not more hellish than the reality.

Does the publishing world need reorganizing? Of course it does, but it has equal need of recapitalising if it is to fight a decent battle against the odds of this laissez-faire paradise of demagogues. Publishers want more financial support if they are to take risks that are worth while. Fine books necessitate the locking up of much scarce capital, and nowadays it is only the purveyors of cheap and sloppy fiction who are able to operate on a big scale. There is need for more co-ordination and co-operation, but it is devilish difficult. Perhaps Mr. Gordon Craig can offer some suggestions on the point. It is true that publishers have produced lavishly since the war, but let Mr. Craig view some of the results in the special remainder shop of one great store (with a clock)—an accursed hecatomb of prostituted literature. And it is not, as might be suggested, through lack of advertising. Many of these waste-paper-price productions come from great journal organizations with unlimited space at their command. In our own line, from personal experience, I can point to over 300 art and architectural publications of a sound standard (not ours) slaughtered in the last two or three years. Are the booksellers unenterprising? Very possibly, but they have a hard struggle to cope with a flood of stuff out of all proportion to their scanty *clientèle*. And Carey Street yawns for them—and us—like the jaws of hell in a mediaeval illumination, and they are disappearing into its maw at the rate of about one a week.

It only remains to touch on Mr. Craig's *Puzzle One* regarding the Suitable Author. Experience proves that it is not easy to find people who are prepared to write, collate and classify with knowledge and authority, and yet concisely and in such a way as will appeal to a wide circle of uninstructed readers, for the meagre return which is all that a cheap Album-Illustration series will allow. Specialized authorities are apt to be disinclined to sum-

marize wide research in the briefest general introduction. There are enough quite able and manifestly "brilliant" young men who can produce clever, amusing stuff in an Oxford (or Museum) accent, but they are too often not over strong in analytical knowledge and first-hand scholarship. We want more than just an anthology of current fashionable ideas; and I do not think that in England there is a range of writers on art and architectural subjects comparable in numbers or authority with that which exists in Germany or France. But in this connection I should like to make acknowledgment to THE ARCHITECTURAL REVIEW, a good layer which recently seems to have been hatching out some promising eggs.

I am, Sir,
Your obedient servant,
HARRY BATSFORD.

15, North Audley Street, W.1.

MARGINALIA

BRITISH BUSINESS DEVELOPMENT



The accompanying sketch, made from an architect's drawing, shows the new offices at present in course of erection in Lynchford Road for Mr. H. W. Brake, Land Agent, to replace the building on the same site which was destroyed by fire on Saturday, March 12 last.

This business, which has been conducted by Mr. H. W. Brake since 1905, was founded in 1870 by the late Mr. H. J. E. Brake, whose name is still familiar to many by reason of the prominent part he took in the early development of Farnborough.

At the present time Mr. H. W. Brake is developing a large estate on the main London road, a little to the north of Farnborough station, where there are many excellent sites for middle-class dwelling houses, and he is also handling estates involving some thousands of acres in other parts of the country. It is a feature of the business that any piece of land may be purchased by instalments spread over a period of years to meet the convenience of clients.

The new building, which it is hoped to occupy early in the New Year, is being erected under the supervision of Mr. W. H. Jenkins, P.A.S.T., Chartered Surveyor, of Gravel Road, S. Farnborough.

—Aldershot News

"CIVILIZATION."

"A straw floating down a stream,
Devil where angel should have been!"

Mr. M. J. Adams, who exhibits a series of striking water-colour drawings executed with a broad and original technique, entitled "Civilization," at the Foyle Galleries, takes a delight in illustrating macabre types of derelict humanity. His swirling compositions contain figures, dimly appearing out of a dark background of mongolians, Jews and half-wits, starving and deformed, gathered together in a torpid companionship in the London streets. "Street Musicians," which we reproduce here, is characteristic. Mr. Adams can draw powerfully, and his work has sometimes the quality of Goya, sometimes of Hogarth. Appropriately the proceeds from Mr. Adams's exhibition are to be given to the Cancer Hospital and the Treloar Homes.

Ruth Adams exhibits oil paintings, among which is a terrifying and excellent portrait of a big-boned half-witted youth.

The wood carvings by Miss Yglesias, the third exhibitor, will be of considerable interest to architects. They are executed in a unique manner, being bas-reliefs on various coloured



STREET MUSICIANS

woods, whereon the severity of the design is emphasized by the grain and colouring of the material. They are suitable for panels in walls, and I am sorry that I have, as yet, no illustrations of her work.

These three artists exhibit greatly differing attitudes of mind in the space of four walls. And it is interesting to find three people so competent in the expression of their outlook.

BELATED ACKNOWLEDGMENTS

The composite photograph which distinguished the cover of last month's Special *Concrete and Steel* issue of THE ARCHITECTURAL REVIEW was the work of Adrian Vanderhorst; he is owed an apology for the omission of his name from last month's number.

A further apology is due to Mr. Herbert A. Welch, the architect who was associated with Mr. Frederick Etchells in the designing of Crawford's Advertising Offices in Holborn, illustrated on page 220 of the last issue. The text under the photograph of this building, one of the few distinguished office blocks in London, omitted to mention Mr. Welch's

name in connection with that of Mr. Etchells, as joint architect.

AN OASIS IN PICCADILLY.

Messrs. Fortnum and Mason have launched out into a "modern" department, which is badly needed in a large West End shop at the moment. The trade depression seems to have made the average retailer more cautious and what he calls "conservative" than ever; a venture is an "innovation." The shop windows just now contain the usual assortment of sham - eighteenth - century, sham - Tudor, "jazz-modern" (for most shops seem to think that any old colours divided up by irregular lines are "modern"), and it will be a relief to see the works of real artists displayed for the public's benefit. If this department is successful, as it no doubt will be, perhaps it will mark a return to the days of the Georges, when shops were a constantly changing exhibition of beautiful things and museums inconceivable.

TRADE CATALOGUES

Now and then books come to this office which, for their sumptuous bindings and lavish illustrations, are at first regarded as the productions of some art publishers. But they turn out to be trade catalogues and because it would amount to deliberate advertising in editorial columns to mention them in the Book Review pages of each issue, they escape proper recognition. This winter there has been a fine bevy of them: first come the type books and almanacs and calendars printed by the Curwen and Kynoch presses; then come the catalogues of metal and wood working firms. It would be well if many English publishers could take a leaf out of one of these catalogues and use it as an example of format for their next publication on one of the arts. Among the best catalogues are those of the Stitson White Co., the London Brick Co., Hope's, Heal's, the Birmingham Guild, The General Post Office, Telephones Department (a revolting cover but practical and well printed interior), Morris Singer, and best of all, Shell.

Unfortunately interesting material is frequently produced in an indifferent pamphlet. Why, for instance, do Eaton, Parr and Gibson display their interesting coloured transparent polished plate glass, of which they show good coloured illustrations, on an inadequate little pamphlet whose reading matter is so much more amusing and appropriate than the former.

RURAL INDUSTRY

The Underground Group, with its usual bounty for worthy objects, has lent the booking-hall at its Charing Cross Station for an exhibition of Rural Industry. The rural craft of the smith, the quilter and the carver look well in the midst of industrial surroundings. These attempts to revive the innate craftsmanship of Englishmen do not meet with the success and advertisement they deserve.

A NEW PUBLICATION ON ECONOMY IN HOUSE DESIGN

In these difficult times when almost every client expects his architect to make a shilling do the work of eighteenpence, the publication by *The Architectural Press* of a new book by Mr. Edwin Gunn, entitled *Economy in House Design*, seems particularly opportune. Mr. Gunn has the well-deserved reputation of always being able to give wrinkles as to how little things in architecture can be better done, and an examination of his new book shows that he also knows how they can be more cheaply done. The book itself is cheap too; it costs a modest seven shillings and sixpence!

THE ARCHITECTS' GOLFING SOCIETY CHALLENGE CUP



This cup was presented by L. SYLVESTER SULLIVAN, and was made by H. G. MURPHY to the design of ROBERT YORKE GOODWIN. The engraving was executed by G. FRIEND, and the base by LAURENCE TURNER. The cup is of silver and the base of unstained English walnut. The inscription is incised and filled in with white sealing wax.

COUNCILLOR'S HOARDINGS

Mr. Henry Osborn King, a councillor of the city of Oxford and a member of the town-planning committee, was fined 10s. on each of two summonses at Woodstock recently for exhibiting advertisements within view of the highway.

Mr. A. C. Longland, a barrister, prosecuting for the Oxfordshire County Council, said that the advertisements stood at a spot on the Woodstock and Oxford road otherwise unspoilt and at a place where the scenery was rather delightful.

Evidence was given by the county surveyor, Mr. G. D. Bennett, that the signs were about twelve feet long and three feet deep, were painted on one side with white letters eighteen inches deep, and were covered on the reverse side with enamel advertisements coloured blue.

Mr. King said that during three parts of the year the signs were obscured by foliage, and he also claimed that he was exempt from the Act because the signs did not form part of a view of surrounding scenery.

"The spot," he said, "where I erected these signs is a flat piece of country, dull and uninteresting, and near a garage where the name is plastered all over the roof. It is a hideous bit of country."

—*Daily Express*

Light Correspondence

The Editor,
THE ARCHITECTURAL REVIEW.
Sir,

The accompanying illustration is cut out of one of your pictures in the October number of THE ARCHITECTURAL REVIEW. Is it a crook for double-jointed sheep?

Your obedient servant,
ANDREW UNDERSHAFT.

St. Mary Axe,
London, E.C.



THE TREE LOVER

In these days when the need for afforestation is recognized by all countries anything that calls attention to the beauty

and utility of trees is welcome; and so one is glad to find that that skilful depicter and lover of them, Canon Lonsdale Ragg, has just issued, with Messrs. Alexander Moring, Ltd., of the De la More Press, Cork Street, London, the first number of *The Tree Lover*, which is to be published quarterly. The first number is full of delightful and informative matter contributed by such authorities as Miss Gertrude Jekyll, Miss Agnes Fry, and by no means least, the editor, too, whose beautiful studies of trees add greatly to the attractiveness of the publication; while Miss Olive Ward Hunt's design for the cover exhibits her feeling for the wood-cut effect as applied to decorative treatment. The yearly subscription for the quarterly is only 5s. (single copies can be had at 1s. 6d.).

* * *

Woman's Point of View

QUEEN ANNE

"Jennifer" in the *Daily Mirror*, writing from the Woman's Point of View, has such a jolly suggestion for beautifying ugly old Regency or early Victorian Houses. You know those awful marble mantels—"Jennifer" illustrates one which is a simple affair in marble without any decoration other than incised panels—"which may have been all right in a different era," she says, "but which look quite awful to eyes trained in modern methods of decoration." Well, all you have to do if you have got one of these horrid, simple, heavy things in your house is first of all to replace the hideous metal barred grate with a nice one in red or green tiles. Then you make a case in hard wood in the Queen Anne style to fit over the ugly old marble mantel.

In the one she illustrates five-eighth prepared oak was bought. It was decorated with beading purchased by the foot. Design is a matter of taste. There are a great many different types of beading in various designs and widths. If necessary, a beading can be placed to cover unsatisfactory joins, thus overcoming one of the chief difficulties of the home carpenter.

* * *

A HOUSE THAT WOMEN LONG TO HAVE

This dream house is such a one that many women long to have. It is a clever combination of old-time picturesqueness and charm with modern hygienic and labour-saving ideas.

Deep cream plaster walls, cheery red tiles on the roof and mullioned windows give it a delightful exterior.

It was with a feeling of adventure that I rang the bell when I called to see Mrs. Ward and waited for the door, of old oak that would not shame one of the stately homes of England, to be opened for me.

A lantern hangs each side of the porch. I stepped into a panelled hall which has a brick fireplace and another lantern and Mrs. Ward took me into the lounge.

This is named the "Galleon Room," because, in order to harmonize with the delightful style of Tudor decoration, a model of a galleon stands on the sideboard, a design of another is to be placed over the fireplace and the pattern of one of the wool rugs also includes a sailing ship.

The lighting in this room is interesting. Small lanterns are fixed on the walls, but as these would not give enough illumination, strip lights were placed behind them to reflect on to the ceiling.

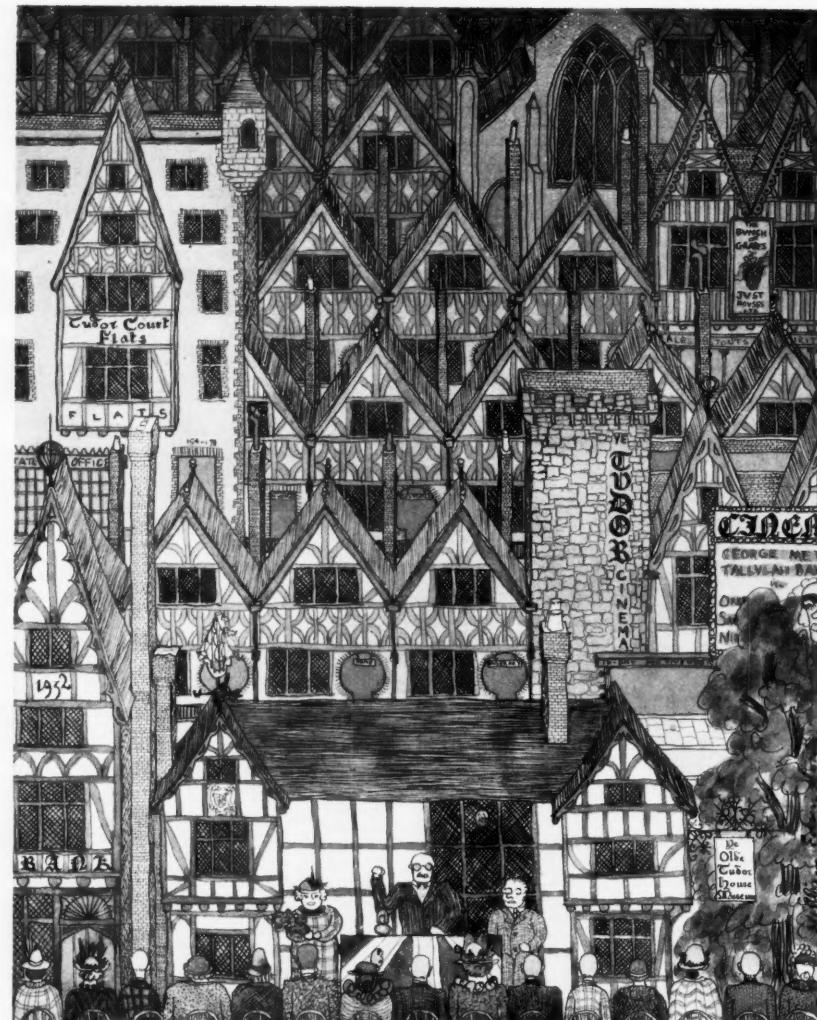
"SEEMS LIKE HEAVEN"

The baby girl has a small pink wash basin installed in her nursery. Her pink cot is prettily painted and her mother gave her a hollyhock design in her rugs.

"I chose black and white for the bathroom to have it 'different,' said Mrs. Ward, and very modern it looked."

Mrs. Ward thoroughly enjoyed helping to plan her home and now she is in it—"It seems like heaven after the other house," she says.

—The Doncaster Gazette



Drawing by William Edmiston

TIMBERMANIA
OR
KEEPING IN KEEPING

Have ye heard of the old oak cottage
That stood alone by the stream,
And the ivy leaves clung under the eaves
And covered the old oak beam ?

It stood alone in the forest
But the town crept up like the sea
And factories grew in the fields that we knew
Like the shadows of things to be.

And a handful of city directors
Who barter their souls for gold
And reck no more of a Tudor past
Than they do of a tale that is told

Would have pulled down the old oak cottage
(For what do they think or feel ?)
And have built where it stood alone in the wood
A soulless palace of steel.

We have saved the cottage, my brothers,
And the cottage has been the seed

A hundredfold and a thousandfold
Of the beauty of British breed.

We have planted a thousand gables
Where once there grew but one,
And the ghosts of the past may slumber at last
Well pleased with the work we have done.

But should ever a grey ghost wander
In the place that once he knew,
He will see in his dreams the familiar beams
And know that our hearts are true.

Tho' our buildings be made of concrete
And our offices scrape the sky,
Yet ivy and oak shall be draped like a cloak
For the glory that meets the eye.

Let lavender grow in the garden
And willows weep by the stream,
Yet the heart of the house is the part of the house
That harbours the old oak beam.

MICHAEL DUGDALE.

and now



what about
the

Paving

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?
+

Before getting down to details
consult

FENNING for MABLE + GRANITE

to any dimension
in any surface
for any purpose
+

Fulham 6142-3
Palace Wharf, Rainville Road, London, W.6.

Notes on the New Building for the Daily Express

At last we see in Fleet Street a building that really looks like the headquarters of a twentieth-century newspaper publishing organization. Beside it even the most recently erected neighbour, with its massive ornamental stone façade, has a quite dated appearance.

The most interesting and important feature of the new building, from the point of view of design, is the complete absence of any deliberate attempt at ornament, with the exception of that in the entrance hall which is, I feel, quite out of keeping with the building as a whole.

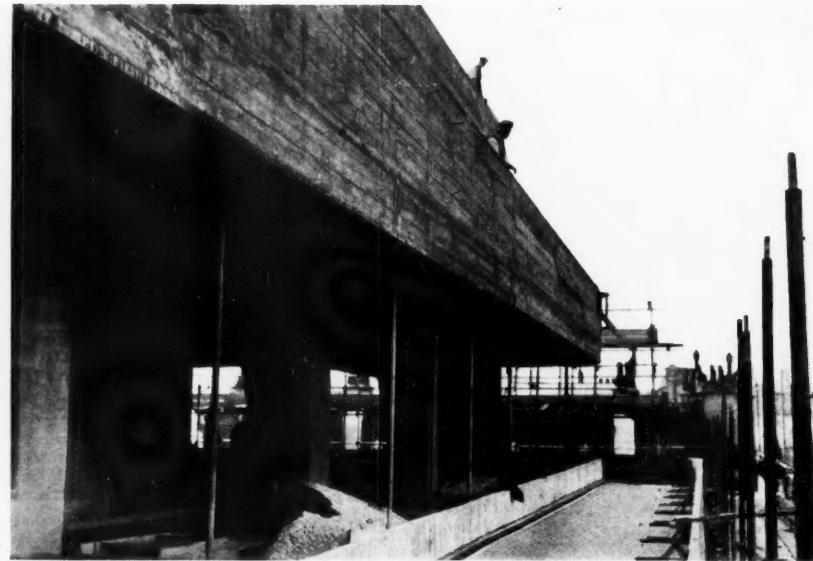
The application of the cantilever principle to the reinforced concrete structure, makes possible the provision of horizontal windows of infinite length unbroken by vertical supports, and floor spaces uninterrupted by columns.

The Fleet Street and Shoe Lane façades are faced with black armourplate glass, which is toughened until it is sufficiently strong to resist a dead load of three or four times that required to fracture ordinary glass. If by some mischance this glass should break, it will not splinter,

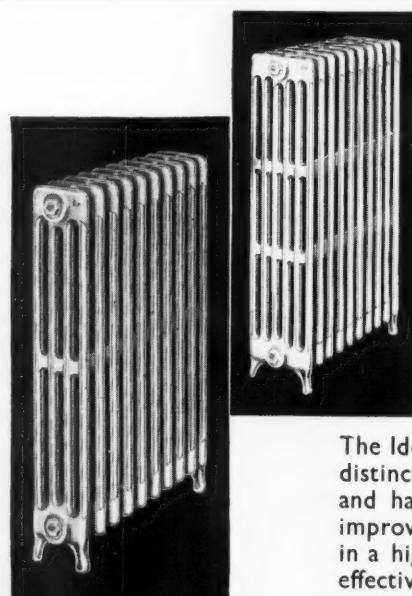
but will shatter into tiny fragments too small to cause any serious harm.

The glass is marketed in finished sizes, and cannot be cut or worked after it is received by the customer. All working must be done by the manufacturer prior to the armourplate process being applied.

To provide a fixing ground for the glass, steel angles and flats are held to the



The Fleet Street front at high level showing the CANTILEVER PRINCIPLE applied to the reinforced concrete construction, and apertures for the long horizontal window.



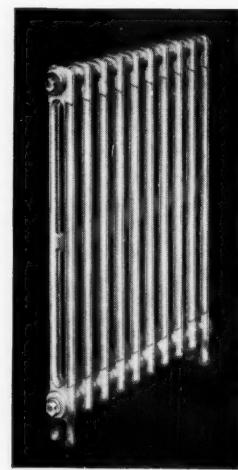
IDEAL NEO-CLASSIC

The Ideal Classic Radiator marked a distinct departure from earlier types and has been widely copied. An improvement in the design, resulting in a higher transmission and more effective distribution of heat is now presented in the Ideal Neo-Classic.
Immediate delivery.

NATIONAL RADIATOR COMPANY
LIMITED.

Ideal Works, Hull, Yorks

Showrooms: Hull, London, Birmingham, Brighton



G.N.

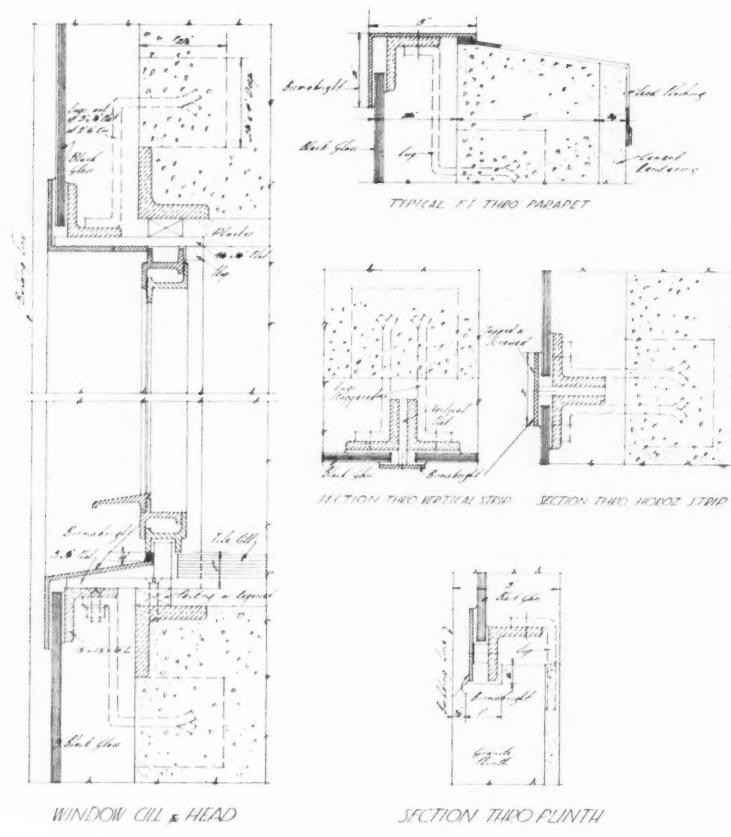
HADEN AND SONS, LIMITED



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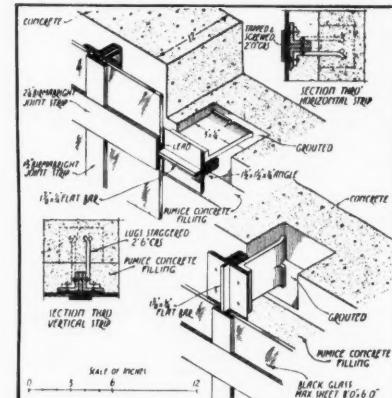
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concrete walls by lugs. The glass is placed and held in position by aluminium alloy strips which are screwed back to the groundwork formed by the small steel sections (see drawings on this page).

It was originally intended to leave a cavity behind the glass facing for insulating purposes, but the L.C.C. insisted on



The drawings on this page are of the fixing details for the black ARMOURPLATE GLASS facing to the principal fronts.

this space being filled with pumice concrete for no other reason than to "fulfil the letter of the Act."

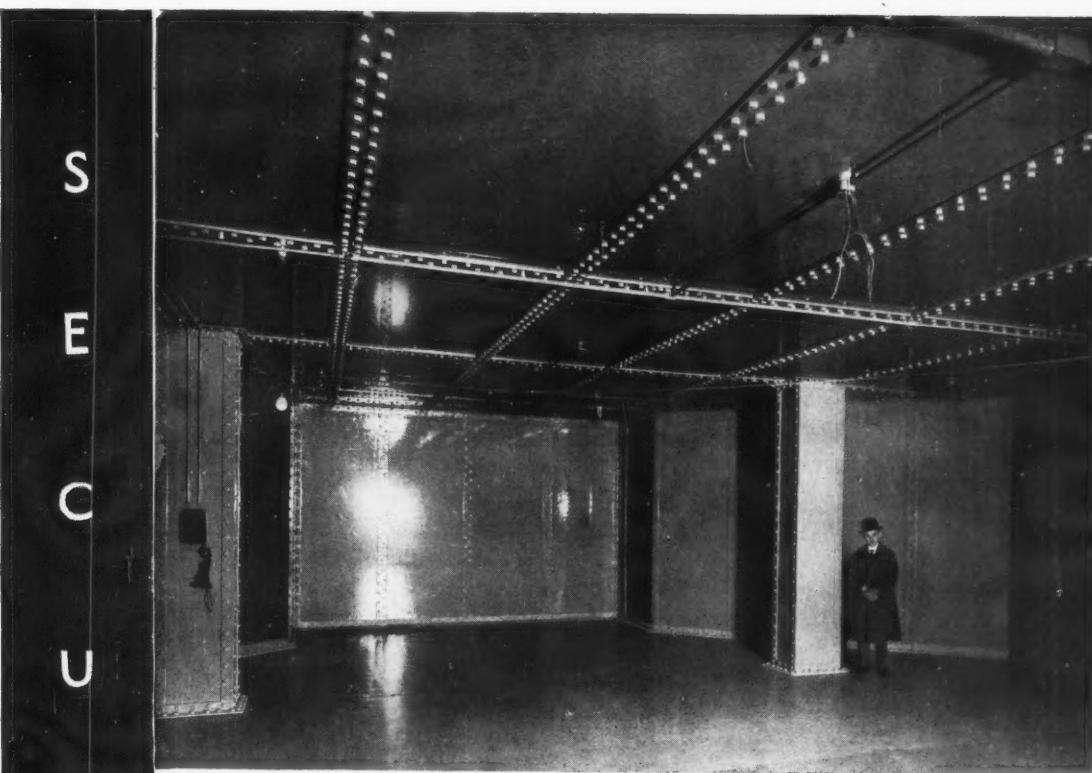
At parapet level aluminium alloy angles hold the glass in position, and under their horizontal flanges are tucked the edges of the lead that is used as a covering for the parapet walls.

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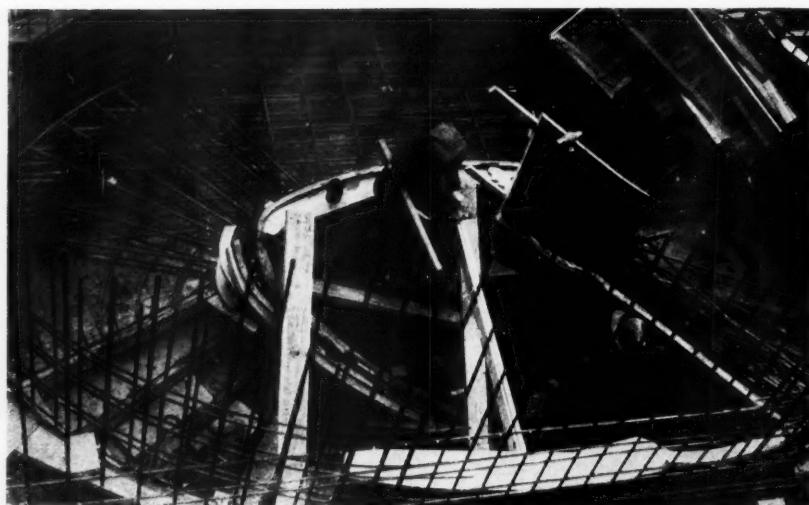
At pavement level the black armour-plate glass is 1 in. thick, in order that it shall be sufficiently strong to resist hard knocks. Elsewhere it has a thickness of only $\frac{1}{8}$ in.

At high level, from the glass-faced fronts of the structure, a metal rail is cantilevered (see Plate IV), and from this, cradles from which window cleaners work, can be suspended. I believe that the proprietors of the building have arranged a contract under which the glass façade and windows are cleaned once every fortnight.

External walls, other than those that are faced with glass, are of 4-in. reinforced concrete, with an internal lining of compressed cork 2 in. thick, rendered with finely-trowelled Portland cement and painted. Externally these walls are rendered in white cement at high level, and at low level, in the areas, they are faced with white glazed tiles



THE LANDING ON THE TOPFLOOR at the head of the elliptical staircase (see also page 10). Note the ebonite dividing strip in the walls and floor.



Preliminary work at the base of the ELLIPTICAL MAIN STAIRCASE, showing the metal reinforcement rods in position.

There is no ordinary plastering on the job. All ceilings, ceiling beams, etc., are left from wrought wood shuttering, surfaced where necessary, and spray painted. Vertical walls are finished with finely-trowelled Portland cement, spray painted or lined with glazed tiles.

The floors generally are supported on reinforced concrete beams, and are made up of a 3-in. reinforced concrete slab, in which the panel heating pipes are buried, and a layer of pumice concrete in which

the pipes of the fire-preventing sprinkler installation are laid. On this is a 1-in. slab of compressed cork which, with the pumice concrete, serves to insulate the floor from the heating pipes in the ceiling below. On the cork is laid the floor finish, which is either granolithic reinforced with chicken wire, wood boards, or wood blocks.

The floors of the printing shops in the basement, which must resist exceptionally heavy traffic, have a covering of special



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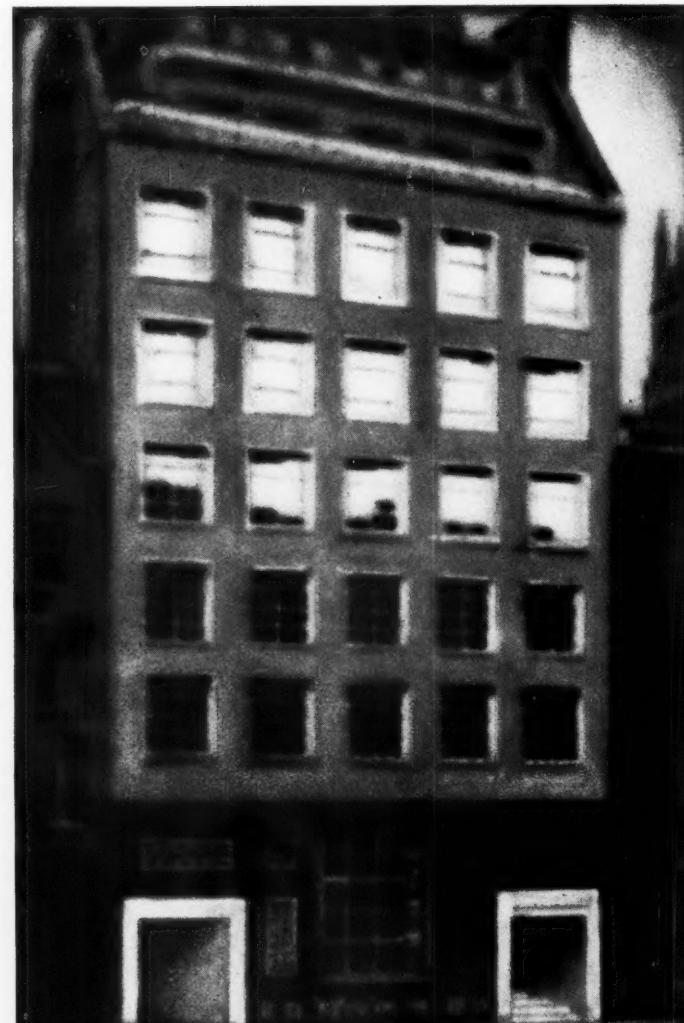


Many schemes have been promulgated to render stairways proof against slipping and numerous ideas adopted to make them attractive. Tiles made of "Alundum" combine both properties, filling the long-felt want of a product which is not only decorative but also possesses the maximum of safety. "Alundum" consists of Bauxite (hydrated aluminum oxide) electrically fused at high temperatures. Its two chief properties are that of toughness and hardness—the only material of a known greater hardness being the diamond. The care exercised during the manufacture of "Alundum" tile gives a product which is not only non-slip under all conditions—wet or dry—but which has proved its durability under heavy foot traffic, an important factor in a newspaper building, where the wear and tear on the staircases must necessarily be great. The above photograph illustrates a part of the main elliptical stairway at the "Daily Express" building in Fleet Street. The architects, Messrs. Herbert O. Ellis & Clarke, F.R.I.B.A., specified "Alundum" tile not only on the main staircase but also on the service stairways. The tile used on the main staircase, which was constructed by Messrs. Art Pavements & Decorations Ltd., of "Biancetta" terrazzo, were $6" \times 4" \times \frac{3}{4}"$ buff round-nosed "Alundum" tile. "Alundum" is supplied in three main categories—round-nosed and straight-edged stair and floor tile, ceramic mosaics and aggregates suitable for incorporation either in terrazzo, granolithic or sand and cement flooring. Write for details.

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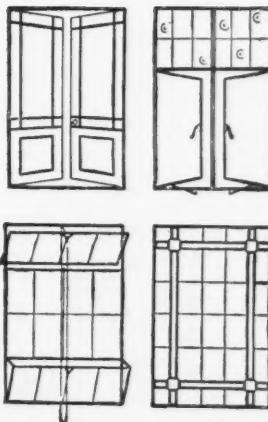
The whole installation operates continuously without attention other than periodical inspection.

FIFTY TWO CORNHILL

Architects: Messrs. Stanley Hall & Easton & Robertson, F.R.I.B.A. Consulting Engineer: W. Macintyre, Esq.

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TRADE AND CRAFT.

granolithic, the wearing qualities of which are reinforced by the addition of metal-crete to the aggregate.

The roofs are covered with asphalt, which is laid direct on the 2-in. thick slabs of cork that cover the reinforced concrete flat. On the roof are the air intake and extract, and the washing and warming apparatus of the air-conditioning plant, the lift motor-room, the domestic water tank house, and the coolers for water used in certain printing processes. Under the lift motor-room is an 18-in. deep cavity which acts as a sound insulator, and prevents the noise of the motor from penetrating to the offices on the floor below. Around this pile of machinery is built a high wall, which, faced with black glass, lends an appearance of added height to the building.

Internally, the elliptical staircase-well and landing-walls and floors are lined with cream-coloured Biancola. In order to split up the large surface areas, and so counteract any tendency in the material to crack, should slight movement take place, narrow strips of ebonite are introduced, and the wall and floor coverings are divided into vertical panels.

The elliptical form of the staircase is entirely structural, and the reinforced concrete stairway and balustrade were screeded in the normal manner, no making up being necessary before treads, risers, balustrade and landings were covered in Biancola. Non-slip tiles are laid along the wearing edges of the stair treads.

F. R. S. YORKE.

The Architectural Review, July 1932.



Part of the Silvertown RUBBER FLOORING at the new *Daily Express* building. The material, which is $\frac{1}{4}$ in. thick, is in green and white and laid in large sheets. It was supplied by the India Rubber, Gutta Percha and Telegraph Works Co. Ltd.

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Notes on Materials at Broadcasting House

WHEN a building is erected to serve an unusual utilitarian purpose it is almost certain that problems of construction will entail interesting experiments in new methods and new materials. But such a building, a factory for instance, presents as a rule no problem of interior decoration. It is little more than a shell, and its architecture a plain and straightforward statement of facts. The interior has no definite decorative scheme, and the organization may be changed, or the equipment re-arranged at will.

The new Broadcasting House is unique. It is in essentials a factory for the production and reproduction of sound, but it is not sufficient that it shall behave perfectly only as a machine: it is considered vital that the artist shall derive inspiration from his surroundings, and in consequence some form of permanent interior finish or decoration is regarded as an integral part of the scheme. In the co-ordination of this and a chaos of complicated mechanical equipment lay the architects' task.

The exact organization, and the arrangement of mechanical devices and equipment were determined at the outset, in order that pipes, wires, and ducts might be concealed and the interior given a clean and definite form.

Conclusions arrived at by research in the Savoy Hill days provided a basis for the work of a purely technical nature, but from that source there was little to be derived in the way of precedent for the appropriate treatment of the modern broadcasting studio. The architects were working on new ground, but their very difficulties had the salutary effect of enabling them to exploit new methods and materials, and to evolve a new usage for old ones.

THE acoustic treatment was of primary importance; and throughout the studios and their subsidiary apartments absorbent and resonant materials were used frankly and were allowed to express their functions.

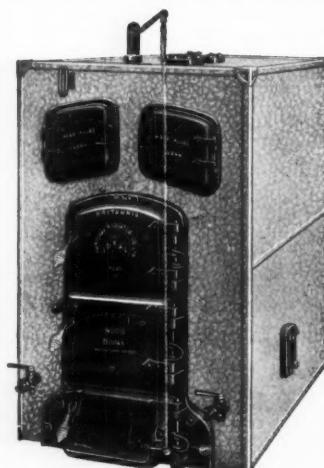
For general studio purposes it was considered that adequate acoustic correction was provided by a certain area of compressed fibre-board, with sound-absorbing qualities, applied to the walls, and for the floors a carpet, over $\frac{1}{2}$ in. compressed fibre board, laid on concrete.

The B.B.C. sound engineers tested various types of the material for acoustical value—degree of sound absorption and quality of tone retained in the sound reflections—and eventually selected four wallboards of British manufacture.

Before the board was applied the walls were lined with a thickness of soft plaster and to this the board was held by linoleum cement, and by pinning to battens sunk flush with the plaster.

The boards have a rough texture, and a buff colour, and are sufficiently pleasant in appearance to need no covering of paint or distemper. This is fortunate, for were the natural surface not exposed the efficiency of the material as an acoustic corrective medium would be to some extent impaired. In certain cases, however, where the general coefficient of absorption is on the high side, a single coat of distemper is used to colour the wallboard on the ceiling.

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The boards are butt-jointed vertically, both on the straight and at angles. Horizontal joints are covered by narrow strips of polished aluminium, painted wood or rubber, or are left open, so that the wood ground forms the vertical face of a shallow groove.

* * * * *
It was decided that in certain rooms there must not be the slightest suspicion of reverberation, and here the degree of absorption provided by the wallboard was considered inadequate.

In the News Studio 4B, for instance, where partitions are of pumice concrete slabs, reverberation is eliminated by a packing of rockwool. 2 in. by 2 in. wood studding is applied to the walls to form 2 ft. by 1 ft. 6 in. "squares" in which the rockwool is held by tightly stretched book muslin. Over this, also stretched, and acting as a reinforcement, is a layer of $\frac{1}{2}$ in. mesh chicken wire.

The visible wall covering, a fabric formed from interwoven strands of hemp and artificial silk, is held at a distance from the mesh by $\frac{1}{4}$ in. plywood cover strips which are tacked to the studding.

The ceiling is treated in a similar manner, and the work being of a special nature was carried out by an upholsterer, who made a remarkably good job of the curved returns of the partitions (34, 36, 69, and herewith).

(At right) The News Studio 4B, showing observation window to News Editor's lobby, and peephole to corridor doors beyond. By Wells Coates.



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TRADE AND CRAFT.

The floors of these rooms are carpeted over $\frac{1}{2}$ in. compressed fibre boards laid on concrete.

* * *

In some rooms certain areas of resonant surface were required, and these were provided by beatl laminated sheet, applied to the walls, and held in position by concealed screws.

Beatl is made from white paper impregnated with liquid synthetic resin syrup, dyed to the required shade. The finished thickness of the sheet is obtained by pressing together between polished stainless steel platens several pieces of the soaked paper. Steam heat is applied and the material is "cured." Then the platens are cooled by cold water circulation, and this process imparts a high finish to the two faces of the material. The effect of the heat and pressure is to cause the resin to harden and form, with the paper, a solid, hard material in which the joints between the sheets are indiscernible.

The material can be worked in the same manner as wood. It is easily sawn, drilled, milled or bevelled, and the lustre can be restored to the cut edges by simple polishing. The colour is constant through the thickness of the material, so that the edges show the same colour as the faces, no matter where they are cut.

For use as a wall covering the beatl sheet is usually fastened to a backing of plywood by a cold process adhesive.

* * *

A thin, solid wall covering made from composition laid on, and united with a paper backing so that it can be hung

The Architectural Review, August 1932.

like wallpaper, is applied to the walls of corridors, lobbies and cloakrooms on several floors. It has a surface that is impervious to water and can be washed, and it is shock-absorbing to sound. It is supplied in a pliable condition and can be used, without danger of cracking, on a curved surface. It is obtainable in a range of fast colours in plain or patterned surface, and at Broadcasting House it is used with a pattern called Finella specially designed by Mr. McGrath with the object of refracting light rays in varying degrees of intensity (65).

* * *

A large proportion of the metalwork in door fittings, observation windows, signal lights and lighting fittings, is in iridescent anodized aluminium alloy.

The metal undergoes treatment in an electric bath similar to that employed for producing the normal anodized alloy, such as that in the canopy and entrance doors to the Shakespeare Memorial Theatre, but it is allowed to remain in the bath for a short time only—about ten minutes—and emerges with a bluish iridescent surface, that still retains its metallic quality and is, to my mind, much more pleasant in appearance than the usual variety which, after prolonged immersion, takes on a rather lifeless white coating.

A corner of the Dance-Band Studio B.B., showing the small audience balcony. The surrounding walls of this balcony are covered with a flax cloth of fawn, orange and blue. The metalwork is brushed copper. The door is faced with dark blue and the balcony front with black synthetic resin.

By Raymond McGrath



INDUROLEUM : CELLUSOL AND MUROLEUM

three products of Docker Brothers, figure prominently in the new headquarters of the new British Broadcasting Corporation.

INDUROLEUM

fireproof and non-slip composition flooring has been laid in all the corridors and in some of the studios. It is made in 20 standard colours, all fast, and has excellent hard-wearing qualities.

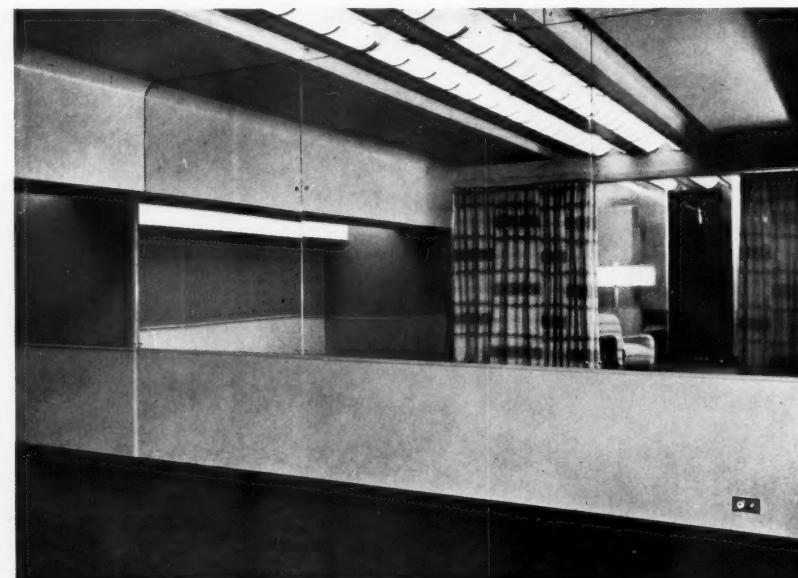
INTERIOR CELLUSOL

is manufactured in both clear and pigmented forms and has been used throughout Broadcasting House for woodwork and metal furniture.

Being applied by spray quickly and economically and being manufactured in an almost unlimited range of colours it may be counted as a "boon and a blessing" among modern decorative materials.

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The painting of the Green Room in greys, pinks and pale greens was carried out entirely in a special eggshell finish Muroleum. Muroleum is a washable flat oil paint obtainable in all colours and having a most satisfactory covering capacity.



THE GREEN ROOM

Architect : Raymond McGrath, B.Arch., A.R.I.B.A.

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TRADE AND CRAFT.

Tubular steel equipment in the dramatic effects room is finished with baked enamel that has a synthetic resin base.

In this new medium there appears to be a solution to the difficulties of the designer who is unable to find a sufficiently durable finish for tubular metal work. The synthetic resin, apart from its qualities of permanence, has advantages over the natural product in that it contains no impurities and therefore does not discolour the pigment during the process of baking.

In the corridors on the fourth floor, above a dado of Australian walnut plywood, a dressing of coatstone is applied to give a textured surface to plain plastered walls and ceiling. The coatstone is composed of Bath-stone dust mixed with a binding medium, and because it presents a harsh appearance it is used here, after being well rubbed down, as a base for two coats of oil paint.

Where a deposit of copper on steel is employed for electric light fittings and standards, etc., the acids in the steel are prevented from acting upon the copper, to form an encrustation on the surface, by plating the steel with nickel before the copper is deposited.

The waiting-room on the eighth floor is paved with small square coloured ceramic mosaic tiles, laid with narrow joints to form a pattern in red, orange, white, claret and grey (Plate VI, top).

The Architectural Review, August 1932.

The corridor of the studio block at sub-basement level has a flooring of blue rubber in which is worked a pattern in green, red and brown. A unity between the corridor and the artists' waiting-room, which is open to it on one side, is suggested by a "directional" sense in the pattern (Plate VI, bottom).

The floor of the artists' dressing-room at the same level is covered with a layer of bright vermilion rubber. The colour, which is a standard one, is particularly pleasing.

Rubber used in flooring is either "pressed" or "drum cured," according to the method employed in the final process of vulcanization.

Rubber tiles, which are laid individually, are in the pressed category, but made-up strips of patterned flooring are, as a rule, drum cured. The strips can be quite plain or they can be inlaid with a colour

pattern before vulcanizing, and it is now possible to obtain sheets as long as 75 ft. by 15 ft. wide—a rubber carpet, in fact, which can be made to the architect's design.

★ ★ ★

Strips of heavy imperishable rubber, with one curved face, are fitted between metal plates to the meeting styles of the doors of studios and lobbies to ensure tight fitting and silent closing (see sketch).

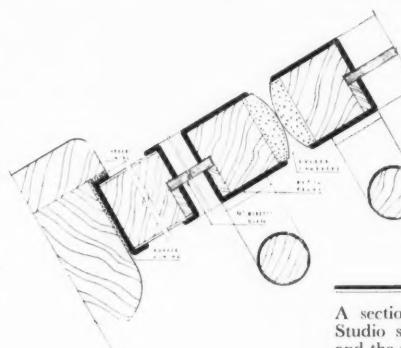
★ ★ ★

A brown shade of camide, a particularly hard form of rubber which is unaffected by heat, is used for the top of the "U" shaped table in the debates studio (70).

★ ★ ★

But by far the most interesting case of the use of rubber occurs in the dramatic-effects studio, where it forms the dado, skirting, architraves, cover strip to fabric wall covering and nosing to fittings (87).

A 2-in. thickness of rockwool is applied to the walls from floor to ceiling, and for the main part has a finish similar to that in the news-studios, but, owing to the nature of the room, the lower part is liable to receive hard knocks, so a dado is formed in grey rubber, which is perforated with holes about the size of halfpennies in order that the absorbent qualities of the rockwool underneath shall not be seriously affected.



A sectional detail of the double doors to the Vaudeville Studio showing the metal frame and solid teak construction and the rubber snubbers and linings. *By Raymond McGrath*

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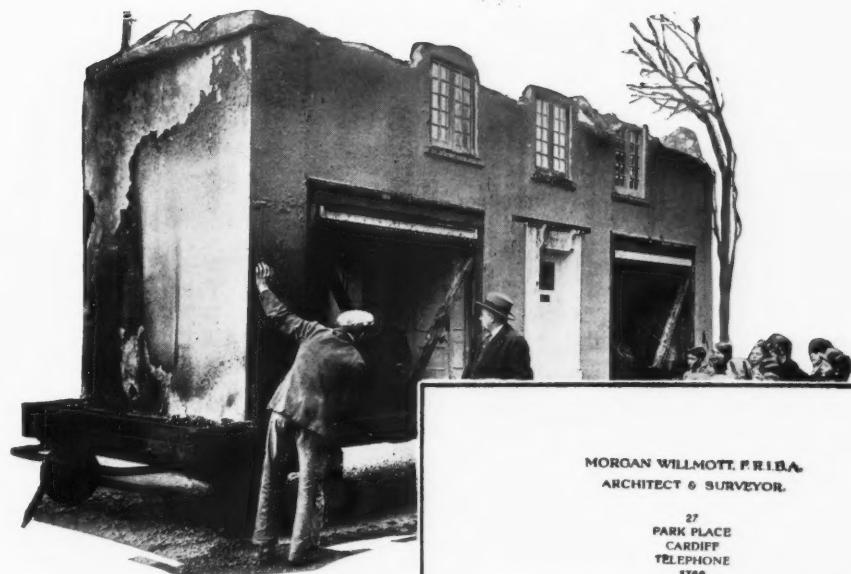
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Needless to say the House now restored has been again treated with this wonderful product.

Yours very truly,

Morgan Willmott

P.20

TRADE AND CRAFT.

The thin rubber cover-strips which run horizontally around the room are secretly pinned, and glued over the fabric wall covering. These strips have two advantages over painted wood fillets. The material being flexible is rolled, and is therefore obtainable in pieces of great length, so no jointing is necessary, and the grey colour is permanent so there is no danger of the fabric being damaged by careless painting.

* * *

The greater part of the floor in this room is covered with carpet laid over felt on concrete, but sections are left in smooth screeded cement, or laid with oak, for "floor-sound" effects (37, 39, 40).

* * *

Wallpaper is used as a wall covering in the triangular listening-rooms and lobbies to studios on the sixth floor, and in order to obtain a correct degree of sound absorption it is laid over a groundwork of 1 in. thick felt.

* * *

In several instances, to give an impression of height, and to avoid a sense of crushing, mirrored glass is fixed to the soffits of low openings.

Mirrors are also used to cover dummy windows, placed at unconvincing points along some of the corridors, and these have the effect of widening the visual space.

In some of the dressing-rooms a feeling of restricted space is counteracted by the application of mirror and black glass to large areas of the wall surface.

The Architectural Review, August 1932.

A CORRECTION.

In the notes on the new "Daily Express" building, I said that the surface of the concrete floor in the printing shop was reinforced by the addition of metalcrete to the aggregate. I have since been informed that actually the surface finish is composed of cement and Duromit, the latter being the aggregate.

Notes and Announcements.

Owing to the B.B.C.'s decision that everything in Broadcasting House must be made by British craftsmen, a number of things have been specially manufactured for the first time, and have now become standard.

The polished woven flax cloth designed by Raymond McGrath, and shown in Plate I, was specially made by the Edinburgh Weavers, and is now put on the market as a standard fabric by them. The Edinburgh Weavers also made the fabric for the settees in Plate V, and for the chairs and settees in Plates VI and VIII. These are all new designs and are now obtainable.

As trolit, a German cellulose sheet, was not available, beatlaminated sheet was constructed for the purpose by Beatl Sales, and is now a standard product, obtainable in

almost any colour. The yellow doors in Plate I are faced with beatl resin sheet, and the dado and vertical strip, which unites the copper clock and the observation window on the north wall, in Plate VII, are of beatl mauve-blue synthetic resin sheets. Again, the tables shown in the upper illustration of Plate VI are veneered with yellow beatl. The point of the material is that it can be worked in the same manner as wood, and with a paper backing can be used as a wall material, without fear of cracking. The surface is impervious to water and is shock-absorbing to sound.

The painting of the room illustrated in Plate VIII, in greys, pinks, and pale greens has been carried out entirely in Muroleum, which is made by Docker Brothers. Muroleum is an oil paint with a flat finish. It is washable and obtainable in all colours.

One of the most interesting features in the whole building are the tiled floors illustrated on page 64, and in colour in the upper illustration of Plate VI, carried out to the designs of Serge Chermayeff in 3-in. tiles, by Carters. It will be noticed that in the colour plate the tiles run up into the skirting. The illustration gives some idea of their beauty and softness.

Another floor scheme—by Raymond McGrath—is shown in the lower illustration of Plate VI. This is in North British rubber, and the design aids the walker to take the direction required of him.



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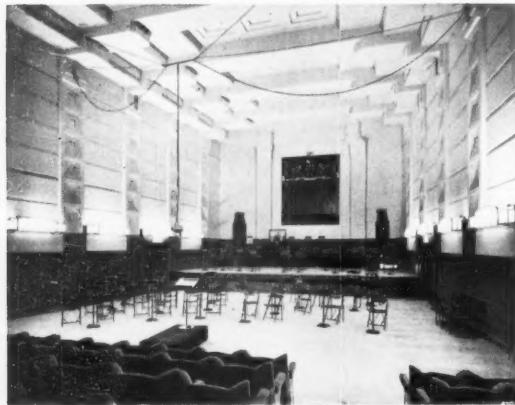
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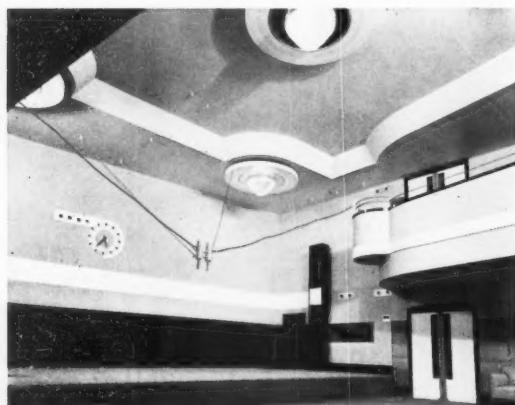
ARCHITECTURAL REVIEW . . . AUGUST 1932



The Concert Hall. See drawing on this page showing construction of concrete steppings and balustrade.

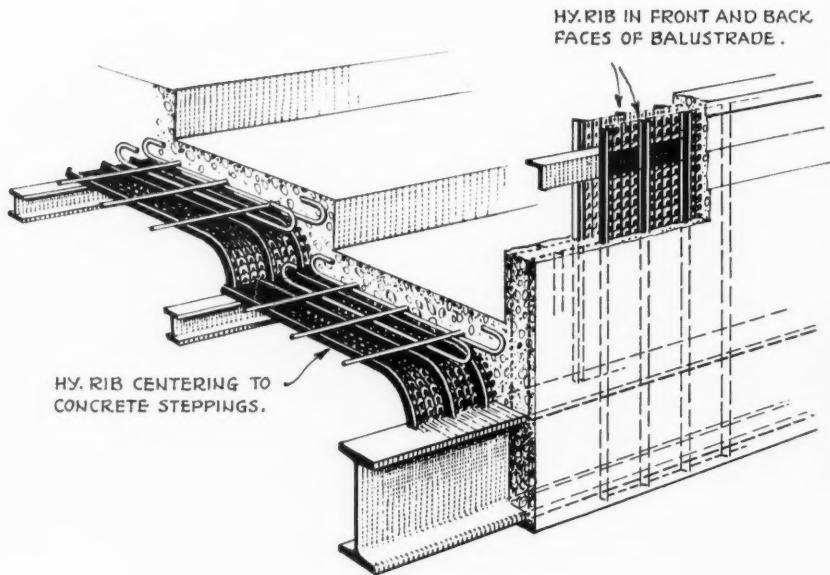


The grooves and coffered surfaces of the walls and ceilings are not only decorative but by breaking up the sound waves eliminate echo and aid the special acoustic plaster in its work.



The Vaudeville Studio (B.A.)

THE TRUSCON FLOOR AND SPEC



HY. RIB IN FRONT AND BACK FACES OF BALUSTRADE.

HY. RIB CENTERING TO CONCRETE STEPPINGS.

THE research of the last twenty-five years has removed acoustical matters from the realm of pure conjecture and established the science on a sound and sure basis.

The scope of the subject has been indicated by a prominent Acoustical Engineer in the form of the following table:—

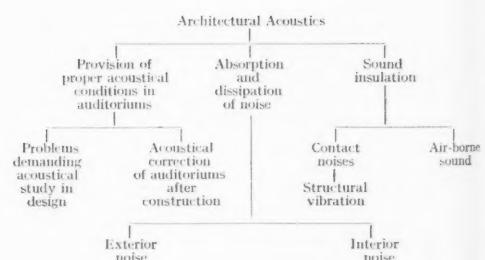
In modern building, with modern economical conditions demanding the use of the minimum of materials, sound insulation problems have increased considerably and the acoustical practices employed in the structure and decoration of Broadcasting House show how great an advance has been made in this latest building science.

Throughout the construction, decoration and equipment of Broadcasting House all other considerations were subservient to two essentials.

(1) *The minimising of echo and reverberation and the exclusion of all extraneous noises penetrating from the street.*

(2) *The prevention of sound transference from one part of the building to another. In the central or studio block each individual studio was designed and constructed so as to be completely soundproof.*

The first problem is solved by having sufficient absorption within easy reach of the source of sound so that each sound as produced is quickly damped down to inaudibility. If the first problem is properly dealt with, the second is naturally rendered much simpler.



THE TRUSSSED CONCRETE STEEL

SPECIAL CEILING CONSTRUCTION at Broadcasting House

Dealing with that portion of the sound which penetrates the surface of the material enclosing the room, the second problem is to convert the sound energy to other forms in the shortest possible time. The ideal material to satisfy both requirements is thus one which has a porous surface which will allow the maximum of sound to enter and reflect the minimum, and whose cellular structure will absorb the maximum and transmit the minimum.

These considerations show the advantage of having a porous and cellular screen attached to the underside of the floor to protect the denser material of the structure from the sound originating in the room below. The suspended ceiling of the Truscon Floor catches the sound wave and absorbs it according to the nature of the material of which the ceiling is made. The sound wave is then converted from a vibration in the air to a vibration in the material of the ceiling. All the material in the ceiling is thus set in motion, but as the ceiling is free to vibrate according to its own period between the points of suspension, a large proportion of the vibrational energy is transformed into heat within the ceiling without being transmitted as sound to the structural material of the floor, either through the medium of the points of suspension or the air behind the ceiling.

To deal with sounds which originate on the surface of the floor, these can be partially restricted by the insertion of a cellular material immediately under the floor finish between it and the structural floor. That portion of the sound which enters the material of the floor cannot be dealt with, because that material must be of sufficient density for weight-carrying purposes. The only concern can be to prevent the direct transference of these sound waves to the air of the room below. The suspended ceiling will in this case act in a similar way to that considered when dealing with sound originating from the underside of the ceiling.

The general principle of the suspended ceiling is the best that can be devised in floor construction. Its total efficiency will depend upon the nature and weight of the material used for this purpose.

Ordinarily a plaster on metal lathing is sufficient for domestic purposes; but where special cases have to be dealt with, in the studios of Broadcasting House, then the thickness of this ceiling may be increased. This has been done with success by backing up the suspended ceiling with an inch or two of weak pumice concrete.

Further refinement can be obtained by the use of an acoustic plaster for the material of the ceiling, or by the insertion of a cellular quilting between the suspended ceiling and the Truscon Floor.

The TRUSCON system of floor and ceiling construction was adopted throughout Broadcasting House as offering the most adequate and economic solution to the requirements of the Architects and Acoustical Engineers.

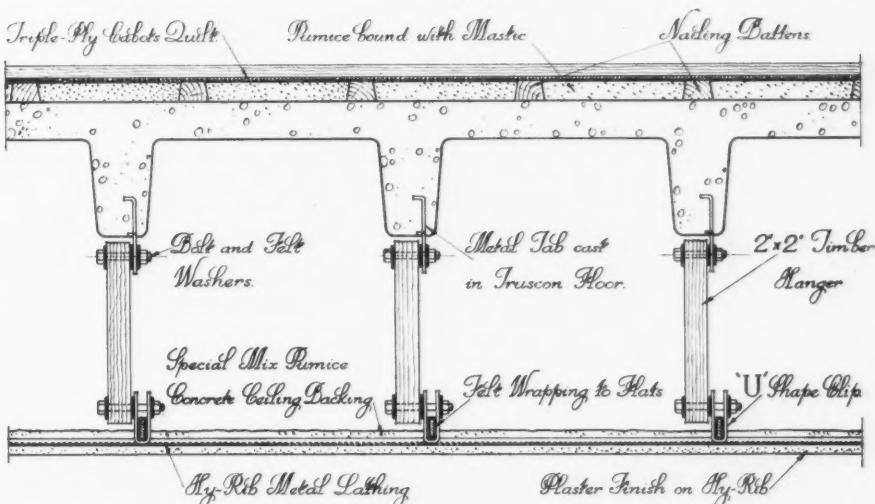
The ceilings, in addition to having the practical value of sound proofness, are in many instances decorative, even in the case of plain ceilings which serve the double purpose of soundproofing plus the masking of the various services which are placed between the structural floor and the finished ceiling.

The area of Truscon Floor used in Broadcasting House amounts to approximately 12,000 yards super, the normal construction of the ceilings and the upper soundproofing being indicated on the detailed drawing reproduced below.

In addition to the Truscon Floor construction, The Trussed Concrete Steel Co., Ltd., were responsible for the design and construction of the mansard roofs, concrete balcony steppings and balustrading, the construction of which is shown on the drawing reproduced here.

The construction of the main ceiling in the concert hall, the contour of which is of bold conception as will be seen from the photograph, presented many difficulties owing to the care which had to be exercised to prevent reverberation. In addition to being ornamental, the main projections which appear as beams across this ceiling form ducts which are part of the complicated system for which Messrs. Carrier Engineering Co. Ltd. were responsible.

The whole of the work was carried out to the instructions of Colonel G. Val Myer, F.R.I.B.A., and M. T. Tudsbery, Esq., M.I.C.E.



*Detail Drawing of Acoustic Ceiling for
The British Broadcasting Corporation.*

THE LIFT INSTALLATION

at Broadcasting House

The six Electric Lifts in this building were installed by Waygood-Otis, Ltd. Each of the four main Passenger Lifts will raise 20 persons at a speed of 400 feet per minute for a travel of over 100 ft. Control is by Car Switch, and the machines are of Geared Main Motor Micro Type, operated by Unit Multi Voltage.

UNIT MULTI VOLTAGE CONTROL

Multi Voltage Control is best described as a system of control where the speed of the Lift motor is controlled by varying the voltage supplied to the armature of this motor by means of a Motor Generator, and thus the inherent disadvantages of Resistance Control are eliminated.

Rapid and smooth acceleration and retardation are provided, and this is definite and constant in operation at all loads in both directions, and high speed travel is possible without discomfort to the passengers.

Each Lift is provided with a Motor Generator Set, driven by an Induction Type Motor with an exciter, which supplies Direct Current to the Lift Motor and Generator fields, and also to the brake coil and controller magnets.

The Motor Generator is stopped and started by remote control from a switch in the Lift car and the armature of the Lift motor is connected to the Generator armature, which supplies the Lift motor with a graduated voltage determined by the strength of the Generator field.

The Generator field has in series with it a resistance which is cut in or out by accelerating switches on the controller.

When the Lift is started, the Generator field is strengthened automatically, thus gradually accelerating the Lift motor until full speed is reached. To slow down, the operations are reversed, and prior to the application of the brakes, the Lift motor is practically stopped by the introduction of a dynamic braking effect, thus minimising wear on the brake shoes.

POWER FACTOR CORRECTION

In order to reduce the free running losses of Motor Generator Sets operated from Alternating Current, advantage is taken of modifying the connections of the stator of the driving motor in conjunction with an operating switch on the starter which automatically reconnects the windings of the Motor Generator Set. This device, besides improving the power factor, effects also a saving in current consumption.

MAIN MOTOR MICRO

With Unit Multi Voltage Control, it is possible to obtain micro levelling without the usual auxiliary levelling machine, and this is known as Main Motor Micro equipment. The Motor Generator Set is provided with two shunt fields. One operates in conjunction with the main controller to give contract speed; the other, which is a high resistance field, operates alone in conjunction with the micro controller governed by the levelling switch, and this allows the motor to be run with complete safety for levelling with the landing gates open.

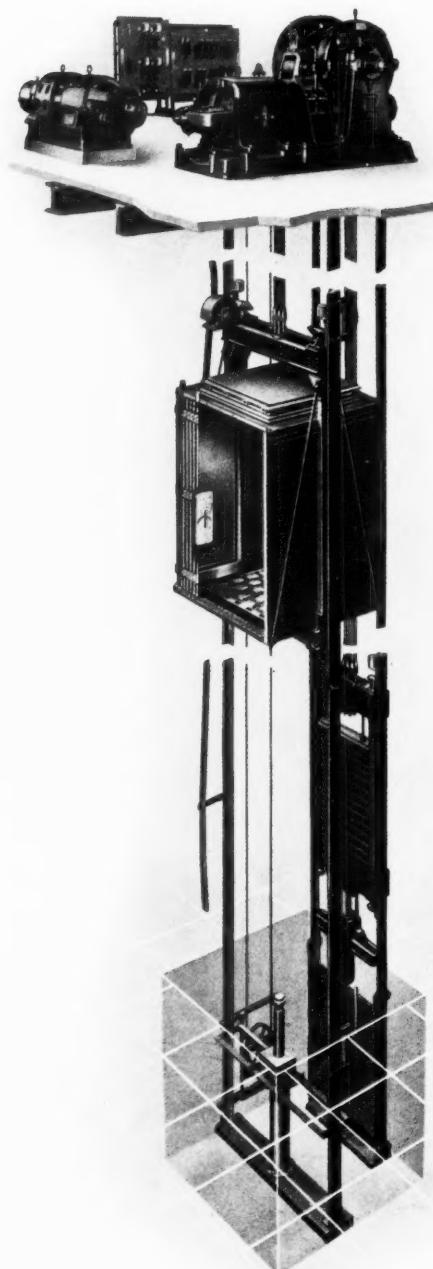
Each car is fitted with an Illuminated Call Indicator controlled from pushes at the landings. Up and Down pushes are fitted at the intermediate floors and single pushes at the terminal floors. Pressure on a landing push advises the car attendants of the floors at which passengers are waiting and also the desired direction of travel. The attendant of one car proceeds to the floor indicated, and when a stop is made at this floor, the corresponding light in the other car is automatically extinguished.

Position Indicators are in the form of model cars which show the position of the car in the Lift well, and direction of travel of each Lift.

The cars are of steel construction, and the design is relieved with fluted corners.

Two-speed three-leaf doors were selected to protect the entrances to these Lifts, owing to their silent operation, quick action and the wide opening obtained.

Two Goods Lifts are also installed, controlled by car switch, and they are capable of raising one ton. These machines are provided with auxiliary micro self-levelling equipment, which ensures that the car is brought level with a floor and that this level is maintained.



MULTI VOLTAGE LIFT WITH WAYGOOD-OTIS MAIN MOTOR
MICRO SELF LEVELLING

In this installation, every necessary precaution was taken to eliminate noise which might interfere with the broadcasting and this, together with Multi Voltage equipment, is the highest development in Lift Control.

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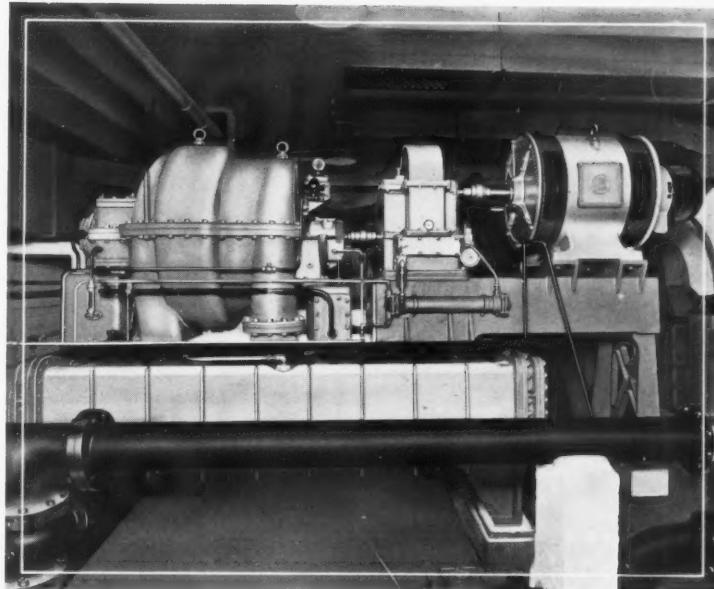
INSTALLATION OF AIR CONDITIONING EQUIPMENT BROADCASTING HOUSE

AS is now generally known, the Studios at Broadcasting House are contained in a central tower, which, for acoustical reasons, is shut off from the rest of the building, and also the outside atmosphere. Mechanical ventilation is therefore essential, but it was decided to go a step further and provide complete Air Conditioning equipment. This means that both the temperature and humidity are at all times maintained at those values consistent with maximum comfort for the occupants, thus ensuring that the artists shall not suffer physical discomfort from what would otherwise be a vitiated atmosphere.

These conditions of temperature and humidity are maintained irrespective of the outside weather or the number of people in the Studios.

The four main Air Conditioning plants each serve a number of Studios. For this reason specially designed sound-deadening apparatus had to be embodied in the ducts to prevent the intercommunication of sound between the various Studios.

Due to the "air-tight" construction of the central tower, both supply and extract



Side view of the Carrier Centrifugal Refrigerating Machine for cooling the water supplied to the Air Conditioning plant

systems have been provided for each Studio, which involved the installation of over 100 tons of sheet metal ducting throughout the building. Most of this ducting is concealed in the false ceilings over the corridors outside the Studio tower and is therefore invisible to visitors.

In addition to the main Air Conditioning plant, there are a number of subsidiary supply and extract systems for serving the various offices, cloak-rooms and lavatories throughout the building.

Oil-fired boilers, capable of raising 14,000 lb. of steam per hour, are provided to serve not only the Air Conditioning and Ventilating plants, but also the accelerated hot-water radiator system, including 840 radiators distributed throughout the various offices.

A Carrier centrifugal refrigerating machine, having a capacity equivalent to the freezing of 200 tons of water per day, is provided for supplying the main Air Conditioning plants with the necessary cold water for cooling the incoming air during the greater part of the year.

In all there are 32 fans handling 614 tons of air per hour, 16 pumps delivering 641 tons of water per hour under pressure, 54 Electric Motors having a combined capacity of 504 h.p., sheet steel ducting weighing 120 tons and 60 independent automatic controls.

All this material has been welded by engineering skill into one automatic Air Conditioning equipment to maintain equable atmospheric conditions in Broadcasting House throughout the year.

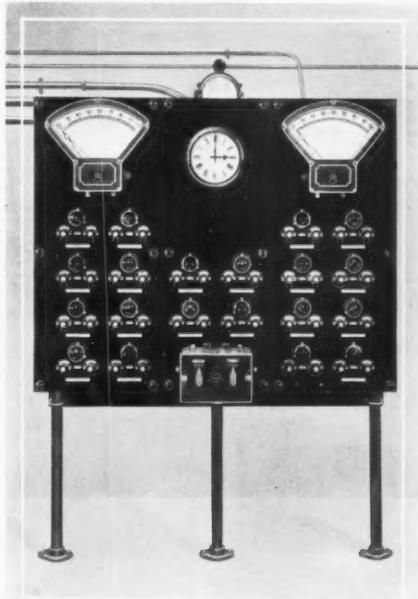


Illustration of Control Board with Indicating Lamps and Thermometers

Carrier Engineering Company Ltd
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Offer a Complete Engineering Service for Architects.

SOUND PROOF OBSERVATION WINDOWS

at Broadcasting House

Designed by A. Wells Coates, Esq., B.Sc., Ph.D., Manufactured by James Gibbons Ltd.

Of the many examples of special purpose metal work supplied to the Studio Block in Gibbons Anodium, we have chosen to illustrate the double glazed curved bay OBSERVATION WINDOWS to Studio 6A for the sake of several points of technical interest which their design reveals.

The problems which confronted the Architect—Mr. Wells Coates—and his solution of them are tabulated below.

The Problems:—

1. To provide the maximum range of vision from the listening-room side.
2. The maximum of sound insulation, by double glass and air space, consistent with minimum loss by structural members of the visual range (above).
3. The elimination, by special glazing methods, of any risk of condensation between panes.
4. To provide a neat and rigid fixing arrangement to walls which are treated on both sides with $\frac{1}{2}$ " acoustic building board (a soft and compressible material).

ANODIUM iridescent finish was selected for its light weight, its permanent finish and essentially modern appearance.

James Gibbons Ltd.
Wolverhampton

The Solutions:—

1. (See Isometric). Wide splay, both at jambs and at sill, lined with ANODIUM over acoustic building board. Projecting curved bay design, double glazed in both planes.
2. (See section H-H). The interior air space was successfully reduced to $\frac{9}{16}$ " and the build-up of the curved sill member on steel core provides the essential glazing requisites within a minimum sight line.
3. (Glazing methods are shown in sections). Note the deep glazing beads; the use of sound-damping felt; the air sealing by mastic and the inclusion of wood inside fillet, for the absorption of mastic-solvent oils. Sealed valves were also included for the insertion of desiccating compounds, if found to be necessary.
4. The whole window is carried by the cantilever design of the steel sill core, which has inward extending legs built into wood frames mounted in the central masonry core of the walls. This structure is covered by the sheet ANODIUM reveals, which are designed to be "telescopic" so that the yielding wall surface is clipped and compressed between them.

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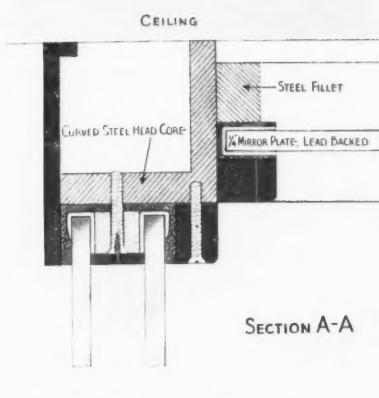
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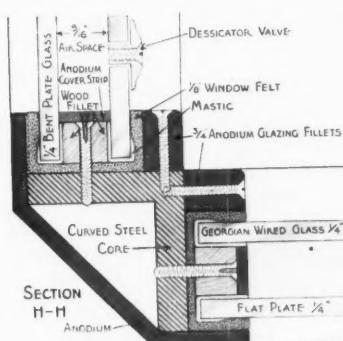
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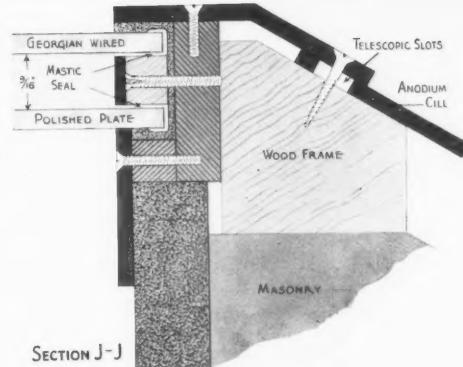
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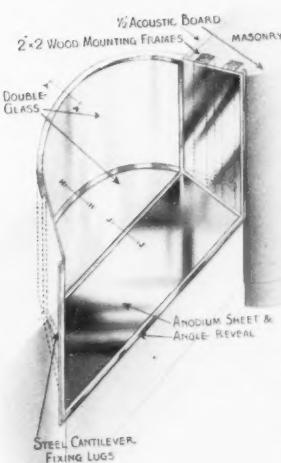
SECTION A-A



SECTION
H-H



SECTION J-J



Other items made to Mr. Wells Coates' designs in iridescent anodium are:—

Electric Light Fittings (see photograph above, and drawing in the editorial columns) 6 off.

Ceiling Bowl Lighting Fittings, 35 off.

Mirror Frames, 2 off.

Double Glazed Observation Windows of various types, 10 off.

Stile plates; peep-holes and furniture to doors.

Elevating and Rotating Table to Dramatic Effects Studio.

Under other Architects we supplied:—Rims and Plates to Signal Lights, 300 off. Furniture to Special Doors.

GIBBONS

LONDON OFFICE:
Fisher St., Southampton Row, W.C.1

THE ACOUSTIC & DECORATIVE PLASTERWORK

At Broadcasting House acoustic requirements dictated to a great extent the character of the interior.

The choice of materials, wall finishes in particular, was determined within definite limits at the outset and in nearly all cases special acoustic plaster, applied by Marshall & Company, was employed as a covering on brickwork and pumice concrete.

In certain studios the plaster was used as an acoustic groundwork for special decorative materials but in others it serves both acoustic and decorative functions. A particular instance is the Orchestral Concert Studio (top photograph) designed by Lt.-Colonel G. Val Myer, F.R.I.B.A., where grooves and coffers in the plastered surfaces are not only decorative but by breaking up the sound waves eliminate echo and so aid the acoustic plaster in its work.

In all cases where voids occur behind the plaster-work they are treated with special acoustic filling; in the Religious Studio, designed by Edward Maufe, Esq., F.R.I.B.A., for example, the plaster shells of the columns at the altar are tightly packed with a sound-absorbent filling. A view of the Religious Studio is shown in the lower photograph.



MARSHALL & COMPANY

DECORATIVE AND FIBROUS PLASTER CONTRACTORS
210 SULGRAVE ROAD, HAMMERSMITH, LONDON, W.6

BROADCASTING HOUSE

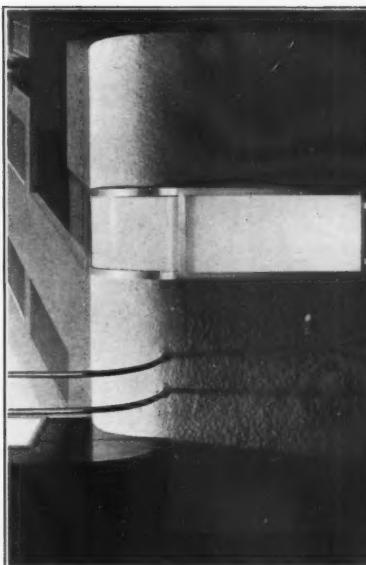
INSULATION - DONNACONA

The selection of internal wall coverings at Broadcasting House was governed by acoustic and æsthetic requirements, and where a wallboard has been used it has been subjected by the B.B.C. engineers to rigorous tests for degree of sound absorption and quality of tone retained in sound reflections, and has satisfied the architect as to its good appearance.



STUDIO 8B [DEBATES].

Donnacona has a unique acoustical characteristic. It will be seen from the graph below, prepared from the tests made by the B.B.C. engineers, that absorption coefficients at various frequencies are practically constant.



PRESS LISTENING HALL—NO. 1.

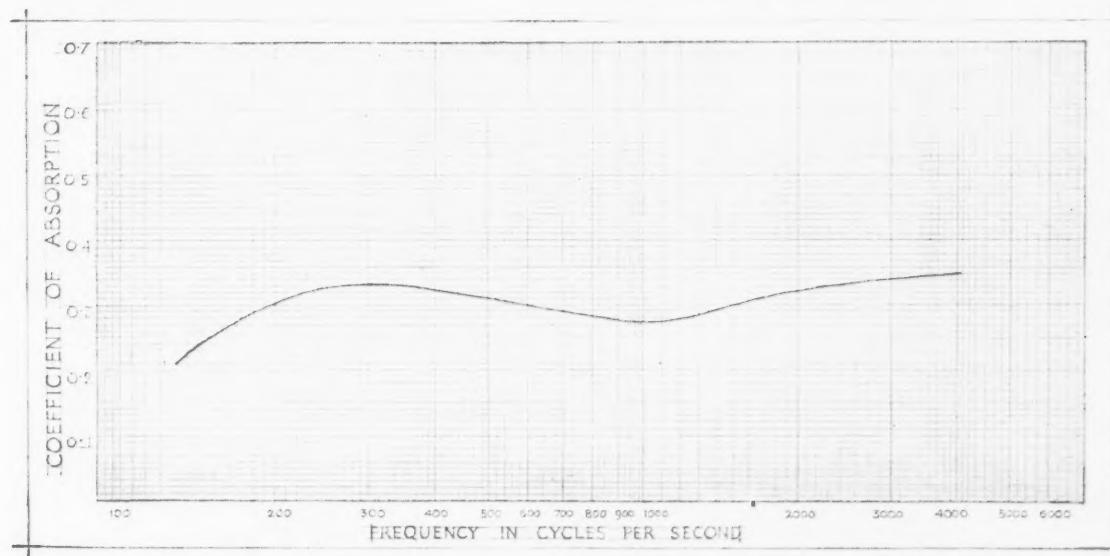
Donnacona has a warm buff colour and a pleasant rough texture. It has been used in the studios in a natural state, without the application of any decorative medium, in large standard size sheets butt-jointed vertically. Horizontal joints are either left open so that the studding, to which the boards are pinned, forms the rear face of a shallow groove, or they are covered by strips of rubber, painted wood, or polished aluminium.

The photograph of Studio 8B—the Debates Studio—shows the effect of such jointing.

The photograph of the Press Listening Hall shows the material used on a curved surface.

Donnacona is a British product, made in Canada from spruce fibre.

Donnacona has been used in the Press Listening Halls, and Studios 6A, 6B, 7B, 8A and 8B



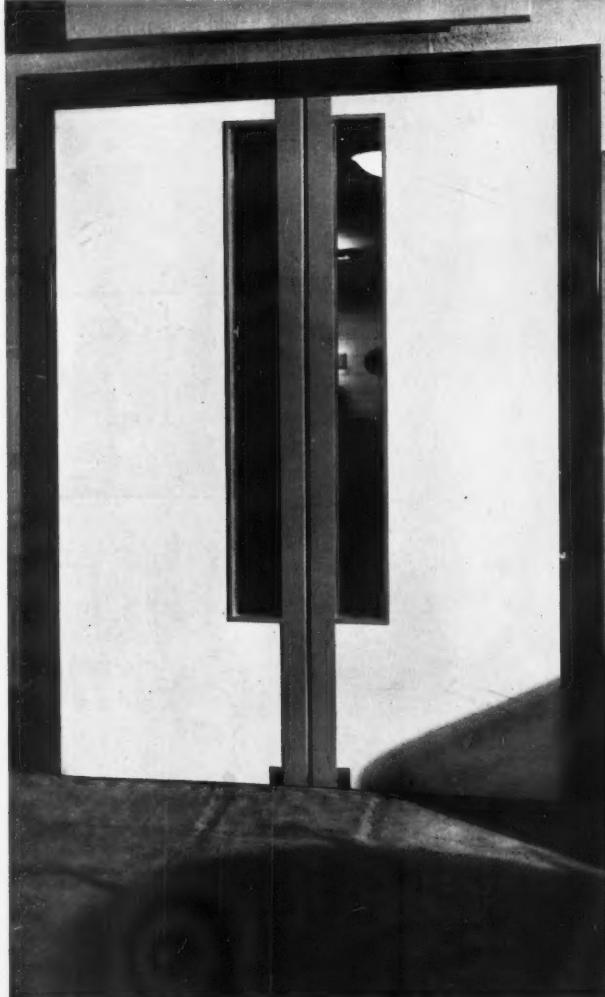
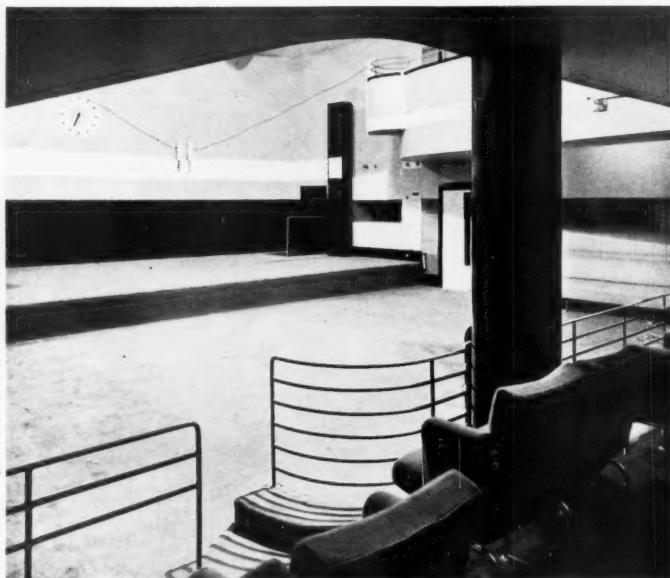
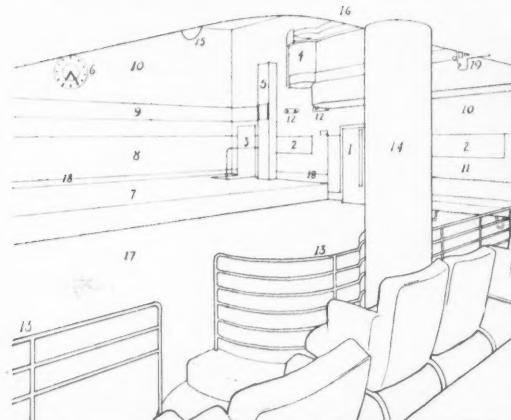
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SPECIAL DECORATIONS at Broadcasting House

carried out under the direction
and to the designs of Raymond
McGrath, Esq., B.Arch., A.R.I.B.A., by
TROLLOPE & SONS



Studio B.A. (Vaudeville)

The photograph and key drawing reproduced above furnish a brief description of the materials employed in the construction and decoration of Studio B.A.

1. Double entrance doors in solid teak, cellulosed metal framing and yellow Beatl veneer, hung on floor springs; rubber meeting stiles adjusted to $\frac{1}{32}$. A detail photograph of these doors is also reproduced on this page.
2. Double glazed sound-proof observation window in cellulosed metal frame.
3. Stage door. Door reveal panelled with black Beatl sheet.
4. Spotlight turret with metal vane supporting spot lamp.
5. Folding stage screens with continuous piano hinges, faced with yellow and black Beatl.
6. Synchronous clock with Beatl dial and veneered markings of the same material.
7. The permanent stage, covered with building board, felt and carpet.
8. Black Beatl dado veneered on 9mm. Gaboon mahogany plywood.
9. Band of yellow Beatl veneered on plywood.
10. Butt jointed sheets of building board cemented direct to plaster face.
11. Polished flax fabric stretched over lined felt.
12. Signal light covers in aluminium alloy.
13. $\frac{3}{4}$ " cellulosed tubular railings.
14. Black cellulosed circular column.
15. Ceiling lighting globes in safety wired envelope.
16. Specially constructed ceiling with acoustic correction.
17. Main floor covered with building board, felt and carpet.
18. Special removable skirting concealing microphone wiring.
19. Thermostatic control.

In addition to Studio B.A. we were also entrusted with the complete fitting and decorations of Studio B.B. (Dance Music) with adjoining Listening Rooms, Waiting Room and Artists' Dressing-rooms, two Press Listening Halls, the Green Room; furniture for Reception Room—ground floor. Furnishings and Furniture for Assistant Controller's Room; third floor Waiting Room; Studio 3D, third floor; Control Cubicles, seventh floor, and the Staff Restaurant all under the instructions and to the designs of Raymond McGrath, Esq., B.Arch., A.R.I.B.A.

TROLLOPE & SONS

Branch of Trollope & Colls, Limited,
West Halkin Street, Belgrave Square, S.W.1

THE DECORATION and ACOUSTICAL TREATMENT of Studios 3E and 3A

In the decoration and acoustic treatment of Broadcasting House Studios the most careful selection of available materials was necessary in order to obtain effects pleasing to the eye as well as to the ear. The specialized studios illustrated were lined with TenTesT, cemented in intimate contact with the wall or ceiling behind it. The natural tint and texture of the material contributes to the eminently successful results obtained, without any attempt at colouring or disguising its surface.

It is interesting to note the treatment of the ventilation inlet pan in the Religious studio; it is faced with TenTesT, as is the remainder of the studio, and serves most decoratively as a clock, the numerals being applied direct to the TenTesT.



*The Religious Broadcast Studio designed by
Edward Maufe, Esq., F.R.I.B.A.*



*The Children's Hour and Dance Band Studio
designed by Serge Chermayeff, Esq.*

The amount of absorption over a range of frequencies varying from 100 to 4000 cycles per second is practically constant, its value being approximately 25 per cent. The actual reverberation periods of the two studios referred to are:

Studio 3A. Children's Hour & Dance Band 0.6 sec.
Studio 3E. Religious Broadcasts . . . 0.8 sec.

These figures are based on a frequency intermediate between 500 and 1000 cycles per second.

The TenTesT Company's Technical Department is at the disposal of Architects interested in acoustical problems.

Deadens noise.
Prevents condensation.



Resists damp.
Speeds up construction.

An Empire Product.

THE TENTEST FIBRE BOARD CO. (1929) LTD.

Holborn 8018-8019

ASTOR HOUSE, ALDWYCH, W.C.2

"Fiboard, Strand, London"

THE DECORATIVE GLASSWORK at Broadcasting House

The mere transparent filling of windows is today the least interesting function of glass and there is not a single type of building in which the generous use of glass is not an advantage, from a decorative, hygienic, or plain utilitarian point of view. Together with steel, glass reflects the temperament of today, with its passion for slim and graceful practicability, and it is being realised that at the hands of designers who are even vaguely familiar with its technical aspects, it is an easy matter to obtain by means of glass, effects of the highest decorative and practical value, with the minimum of expenditure

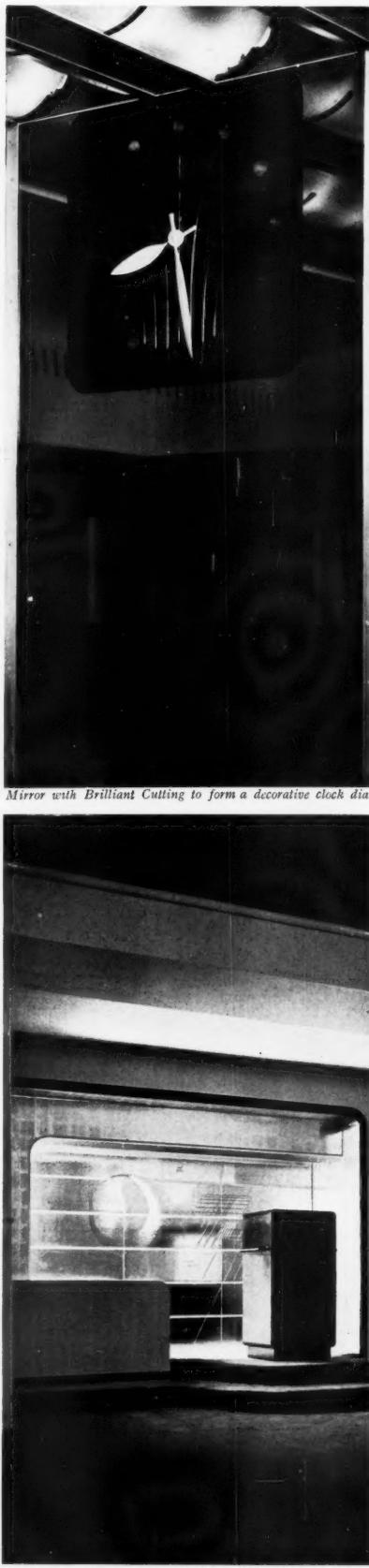
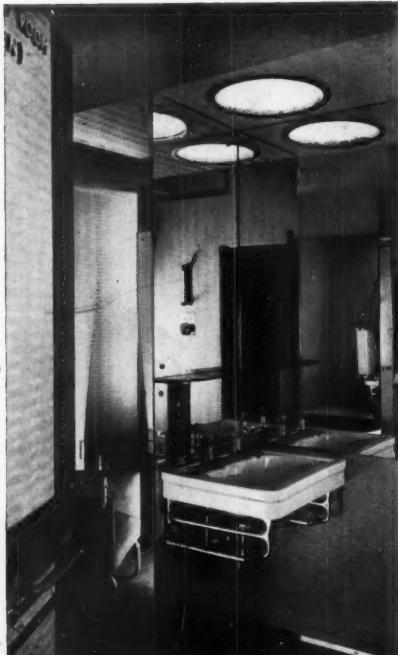
Broadcasting House shows some interesting examples of practical design and craftsmanship in various types of glass. Mr. Raymond McGrath, A.R.I.B.A., who is responsible for the design of the decorative glasswork, has introduced various ideas never before attempted by glassworkers, as for instance "the moon and stars" mirror effect in the Press Listening Hall No. 2. A wonderfully radiant effect has here been obtained by Brilliant Cutting and Silvering a very unusual type of ribbed glass.

Mr. McGrath has also succeeded wonderfully in his endeavour to give an enlarged appearance to the restricted spaces available for the various small dressing-rooms, etc. This has been achieved by the dexterous use of vast mirrors and black glass to cover the walls.

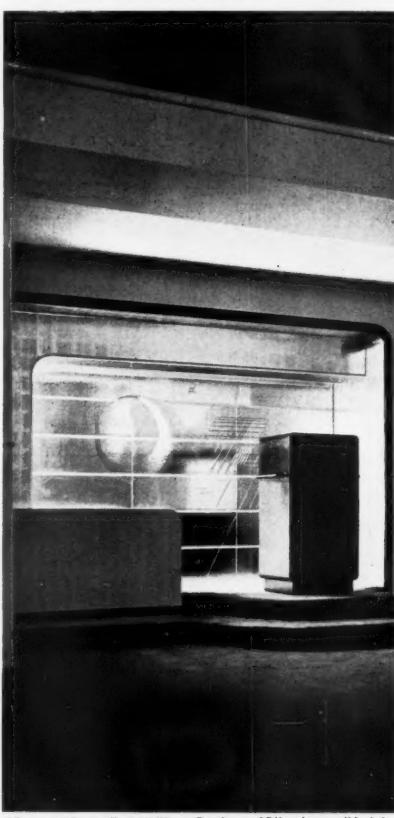
In those places where whole walls are covered with mirror, true reflection is only obtained by the most careful and expert fixing of the glass to the wall, and where several mirrors butt up together, the most exact preparations must obviously be made to the wall to ensure uniformity over all the sections of mirror. In the case of black glass, both screws and mastic are used, while the mirrors are treated with a special backing which is not affected by moisture.

In addition the mirrors at the B.B.C. were backed with layers of B.P. board as an extra precaution against damp and also for soundproofing purposes.

The difficulties that have beset both designer and practical man will, from the foregoing, be readily appreciated. How competently those difficulties have been met and overcome may be seen at Broadcasting House.



Mirror with Brilliant Cutting to form a decorative clock dial



Moon and Stars effect, Brilliant Cutting and Silvering on ribbed glass

PUGH BROTHERS LTD.

Craftsmen in Glass

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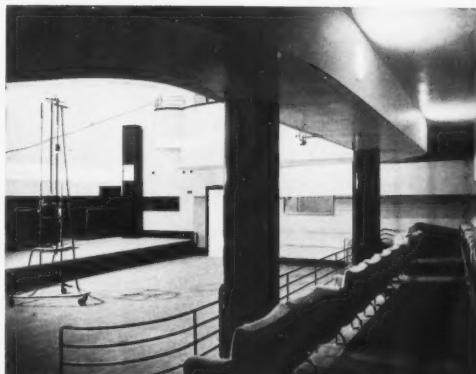
“B.P.” INSULATING BOARD at BROADCASTING HOUSE

“B.P.” Insulating Board has many qualities to commend its use in modern building construction. It has a very even absorption of sound at all useful frequencies, is an excellent thermal insulator, and has great rigidity and strength; the bitumen laminations exclusive to “B.P.” Board

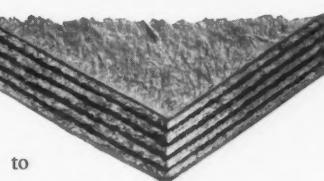
make it highly efficient in its resistance to damp. It is used to eliminate vibration in the construction of the walls to Studio B.A. and in the construction of the suspended ceiling beneath the gallery in the same studio (see section drawing on right and detail of ceiling construction below). As a protection against damp it is also used as a backing to all the decorative and other mirrors throughout Broadcasting House.

It has been used with complete success as a surface lining for walls and ceilings in Cinema auditoria throughout the country, ensuring most satisfactory acoustical conditions. For purposes of decoration it is manufactured with a

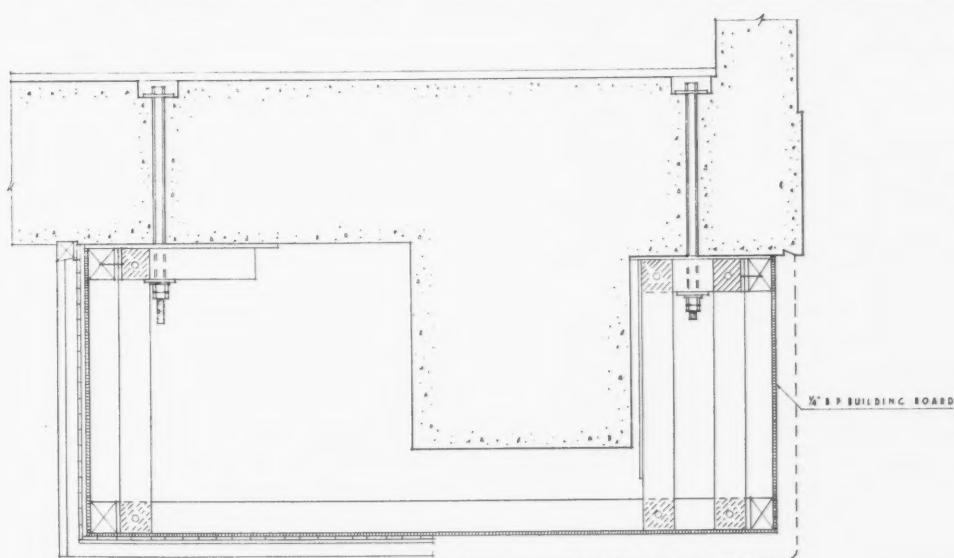
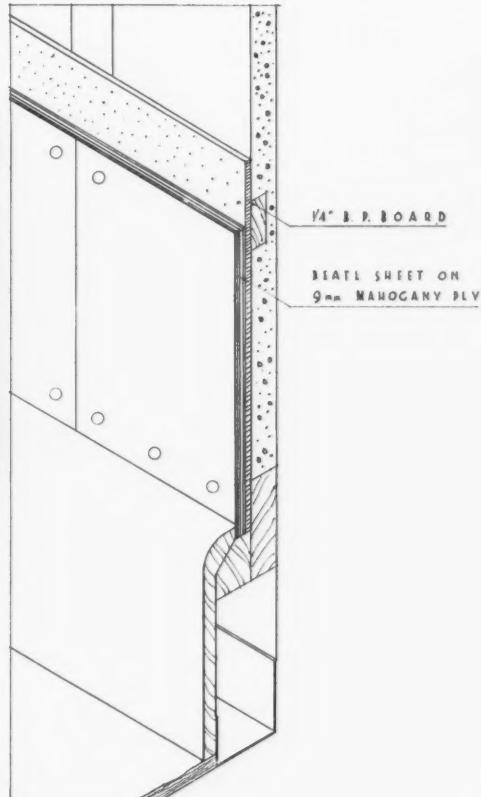
smooth surface on one side, and a pleasant rough texture on the reverse.



Studio B.A.



Architect: Raymond McGrath, B.A., A.M.I.C.E.



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NOTE

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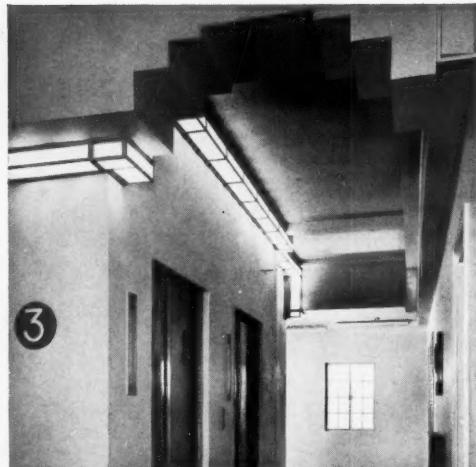
G.E.C. LIGHTING

at Broadcasting House

OSRAM valves have contributed materially to the success of broadcasting throughout the world and it is meet that OSRAM lamps should now be employed to illuminate many of the studios, offices and corridors at the new B.B.C. Headquarters.

In the corridors there is half a mile of luminous cornice lighting, specially made to suit the run, rise and fall of the corridors, landings, etc. The lighting trough is made up from units arranged in a continuous run to provide an unbroken line. Each section houses two lamps and has a removable front to facilitate cleaning, lamp renewals, etc. The visible metal work has a light buff cellulose finish.

G.E.C. lighting fittings incorporating British made "Britalux" glassware were supplied for office lighting; and the waiting rooms, cloakrooms, etc., are illuminated by totally enclosed "Britalux" units 8" to 10" in diameter with white painted metal work. Nearly one thousand of these units have been installed.



Above : Two views of the corridors showing sections of the luminous cornice lighting.

Left : A view through one of the offices at Broadcasting House.

About fifty miles of Pirelli-General cable has been used for the electrical wiring. Magnet conduit and accessories are used in certain parts of the building.

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G.E.C.

LIGHTING

in the Studios
at Broadcasting House

In some of the principal studios at Broadcasting House the Architects employed special G.E.C. lighting systems.



In studio 8A (Military Bands and Orchestras) special lighting fittings were made to the designs of the Architect, Serge Chermayeff, Esq., and a photograph of this studio is here reproduced. The fittings, in coloured flashed opal glass and polished aluminium alloy, are combined with the circular ventilation inlet pans at the ceiling level and produce decorative banjo shapes. The two dummy windows shown on the left-hand side of the photograph are artificially lighted and balance real windows in the opposite side of the studio.

Electrical Contractors: Troughton & Young, Ltd., Knightsbridge, London

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TECHNICAL EQUIPMENT

at Broadcasting House

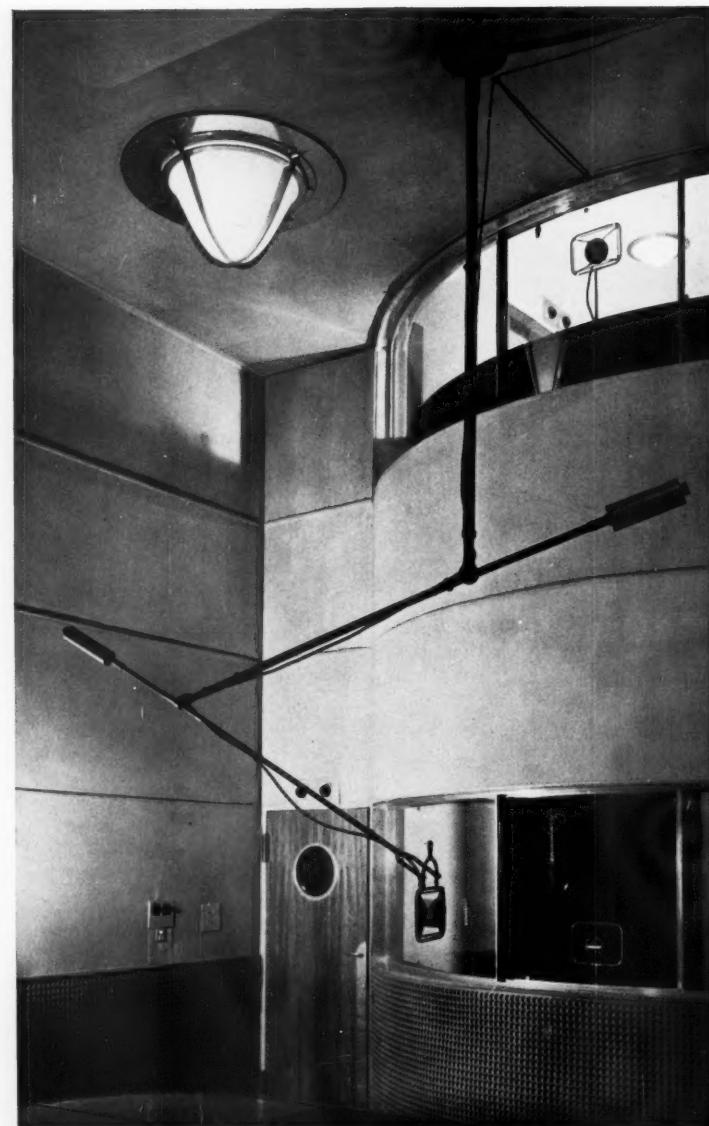
In a walk through the various studios at Broadcasting House one is immediately interested by the special technical equipment—strange in shape, ingenious in design and manufacture.

DRAMATIC EFFECTS STUDIOS 6D & 7D

The accompanying photograph is a view of one of the Dramatic Effects studios, and shows the counter-balanced suspension microphone designed by Wells Coates, Esq., Ph.D., B.Sc., B.A., and manufactured by Messrs. J. Starkie Gardner Ltd. The fitting is composed of:—*Polished Steel, Gunmetal, and Elektron Metal, the exposed parts being finished in Synthetic Baked Grey Enamel; it is fitted with Ball-bearings, and Vulcanite face-friction Adjustable Action, on pivoted and counter-balanced arms, so arranged that the microphone can be placed at any desired point in the space of the room and remain there in perfect balance.*

Other fittings manufactured by Starkie Gardner Ltd. to the designs of Mr. Wells Coates include:—*Extensible and Swivelling wall microphone fittings and swivel chairs in the News Studios 4a and 4b; upholstered Tubular Steel Chairs in Dramatic Control Rooms Nos. 1 and 2, and speak-back microphone fittings in Studios 6e and 7e.*

Fittings manufactured to the designs of Raymond McGrath, Esq., B.Arch., A.R.I.B.A., include:—*Standard desk microphone fitting; Tripod and Counter-balance microphone fitting; the special Endless-Chain standard microphone fitting in Studio B.A.; and the Column Plinths in nickel-blacked Gunmetal for Studio B.A.*



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THE LIGHTING OF BROADCASTING HOUSE

Messrs. Best & Lloyd Ltd. have carried out the lighting fittings in those parts of Broadcasting House for which Mr. Raymond McGrath has been responsible.

These fittings comprise :

(a) *Vaudeville Studio B.A.*

(1) Three ceiling fittings in the form of hemispherical bowls of sandblasted glass.

These bowls are in satin-silver frames fixed to mirror discs on the under-sides of the ventilation baffles.

The glass is enclosed in a wire envelope to prevent accident to the users of the studio.

(2) A series of porthole lights over the ground-floor seating.

(3) A series of shaded programme lights on the balcony front.

(b) *Waiting Room.*

Bent metal lighting troughs giving indirect lighting for general purposes and reading.

(c) *Corridors and Listening Rooms.*

Bulkhead ceiling fittings.



a (1)

(d) *Artists' Dressing Rooms.*

Wall brackets in chromium plate, with cylindrical glass covers.

(e) *Studio B.B. (Dance Band).*

Two ceiling pendants consisting of 20" white opal glass spheres with wire envelopes suspended on brushed copper rods.

(f) *Press Listening Halls.*

(1) A shovel-shaped ceiling fitting in bent metal giving general indirect lighting.

(2) Bent glass lighting panels in satin-silvered frames.

(g) *Green Room.*

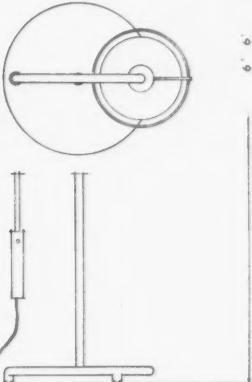
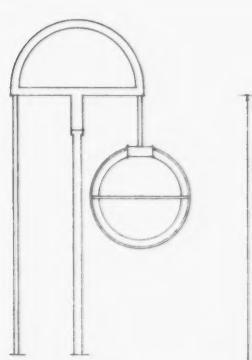
Trough ceiling lighting consisting of bent lengths of double flashed green glass supported on curved green cellulosed brackets.



h (1)

STAND MADE OF 1" TUBING
COPPER PLATED
CIRCULAR TUBE FORMING
BASE COVERED WITH
SHEET METAL WELDED
TO UPRIGHT & BASE &
WEIGHTED WITH LEAD

COUNTERWEIGHT WITH
PUSH BUTTON SWITCH
WIRING FLEX PASSES
INSIDE 1/2" DIAM.
FLEXIBLE CASING
CARRYING COUNTER-
WEIGHT & LIGHTFITTING



(h) *Assistant Controller's Room.*

(1) A lighting standard in brushed copper with an adjustable globe as illustrated and detailed.

(2) A desk lamp in brushed copper fitted to a tubular metal glass-topped desk.

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HEAD OFFICE & WORKS: HANDSWORTH, BIRMINGHAM
LONDON SHOWROOMS: 40 GT. MARLBOROUGH STREET, LONDON, W.1

CARPETS

Made by John Crossley & Sons Limited of Halifax and London, used throughout Broadcasting House.

Nothing can knit together the component parts of a decorative scheme more successfully than a fine carpet.

The Concert Hall, Council Chamber, Vaudeville Studio, Dance Band Studio, Green Room, Press Listening Halls, Production Studios, and many offices at Broadcasting House are carpeted with Crossley products.



Above: The carpet in the Council Room is a heavy cloth with a rich and thick pile in a beautiful stippled effect of taupe and powder blue; the quality is one of Crossley's many plain Wilton and Saxonies.

Below: A view across the Green Room. The carpet here is another plain Wilton in a rich shade of chocolate brown produced in a quality made from a fine worsted yarn.

CROSSLEY'S blend, store, spin, and dye their own carpet yarns, as well as the jute, hemp, and cotton yarns for the back of their goods.

Their machinery is capable of producing a great range of qualities and designs; Seamless Baroda Saxony, Tuscan, Florence, Genoese, Saxton and Umbrian Axminsters, Kashgar Seamless Tufted Axminsters; Plain Seamless Wiltons and Saxonies up to 15 ft. wide, Bengal and Dakhara Jacquards; Lotus and Oriac Chenilles.

Many subtle dyes are to be seen at Broadcasting House, perhaps the finest of which is the powder blue and taupe stipple in the Council Chamber.

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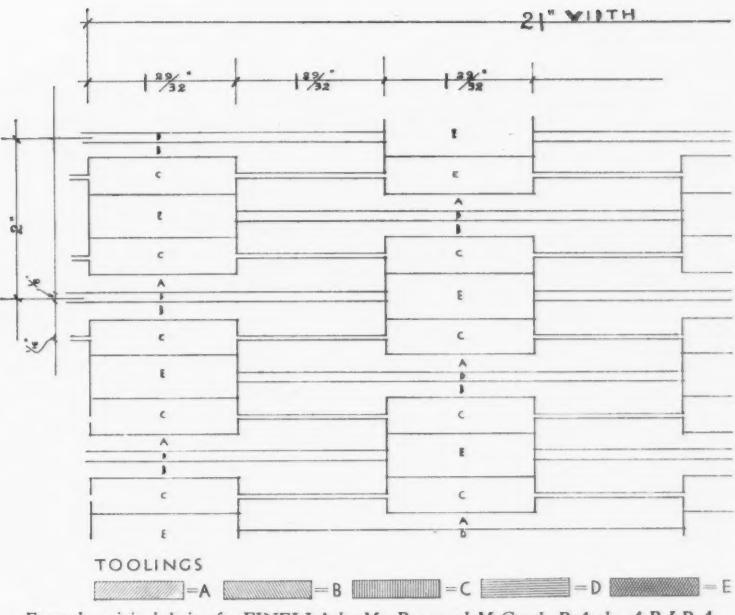
HALIFAX, YORKSHIRE

LONDON OFFICE AND SHOWROOMS: 20 KING EDWARD STREET

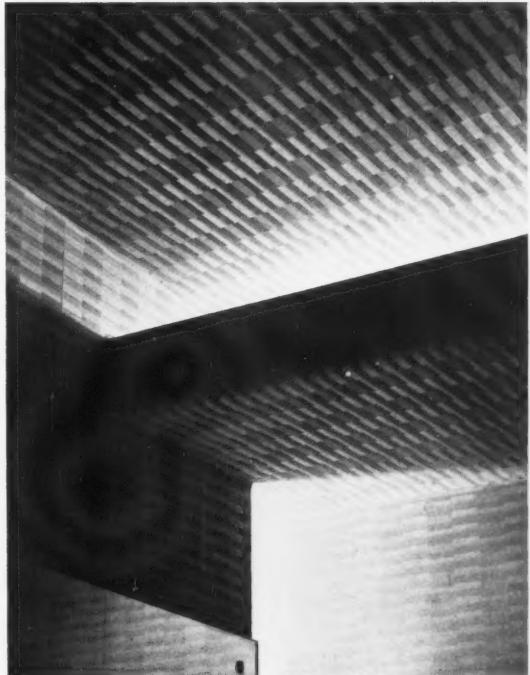
FINELLA WALL COVERING

The material specially manufactured for decorating the walls of the new B.B.C. House to the design of Mr. Raymond McGrath,

B.Arch., A.R.I.B.A.



From the original design for FINELLA by Mr. Raymond McGrath, B.Arch., A.R.I.B.A., showing the toolings and their arrangement



Artists' Dressing Room at B.B.C. House, showing the lighting and FINELLA wall-covering. Architect for the interior, Mr. Raymond McGrath, B.Arch., A.R.I.B.A.

FINELLA

wall covering has been designed to produce a modern wall of interesting texture, which will enhance the play of light and shade over large unbroken surfaces. An abstract design such as that which has been employed has a structural and architectural value which is needed in modern interiors.

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is made in a range of beautiful colours; it is impervious to moisture, and can be washed; it is pliable and can be hung on curved surfaces, also it is solid and will withstand hard wear.

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SPECIAL FURNITURE

at Broadcasting House

Messrs. A. H. Parker Ltd. were entrusted with the production of much of the special furniture designed by Raymond McGrath, Esq., B. Arch., A.R.I.B.A., and Serge Chermayeff, Esq., for many of the offices and studios.

The top illustration shows the furniture in Mr. Roger Eckersley's office. English walnut is the wood employed and the chairs are covered in natural Nigerian goatskin. The design of the desk embodies two features of particular interest; a special swivelling device is built in to the left front of the desk so that



Designer : Raymond McGrath

the telephone, when not in use, may be secreted out of sight and out of the way. A strip of concealed lighting is built into the desk-head giving adequate illumination for writing purposes without the need for any other source of light.



Designer : Raymond McGrath

In the lower illustration we have the Chairman's Room with a striking design of pedestal table in Australian walnut. The writing bed is covered in suède leather, the chairs in antique hide. The furnishing of this room is completed with a circular walnut table with bronze base and a combination settee bookcase in the same wood.

Furniture Manufactured by

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STEEL FURNITURE

at Broadcasting House

CONDUCTOR'S ROSTRUM, STUDIO 8 A (Top right)

The rostrum incorporates an adjustable music stand and revolving seat, the stand being adjustable both laterally and vertically. The metal parts are chromium plated.

WRITING TABLE IN EIGHTH FLOOR WAITING-ROOM

The table has a laminated top and drawer veneered with Bealt; the tubular steel frame is chromium plated (see illustration below and Plate VI editorial).

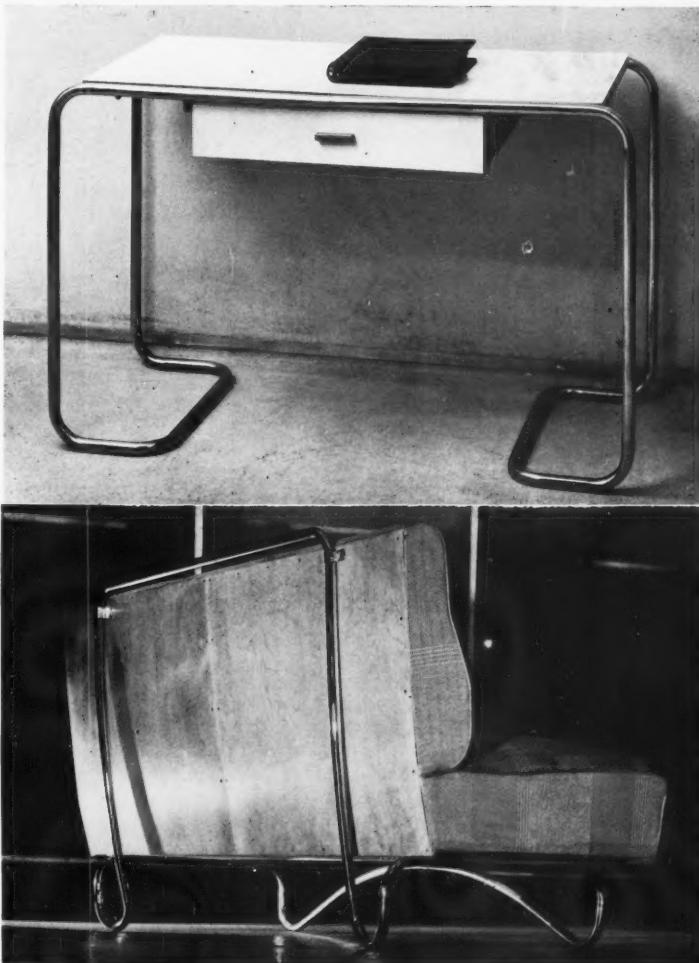
STEEL-FRAMED SETTEES, STUDIO 8 A

The illustration reproduced on this page shows the construction of the settees in Studio 8A. Other photographs showing steel-framed settees made by us appear on pages 54, 58, 64, 69, 70, and Plate V in this issue.

All the above work was executed by us to the designs of Serge Chermayeff, Esq., as also was the horse-shoe Debates Table (see page 68), and the tables in the Band Room.

REVOLVING CHAIRS, BALANCE AND CONTROL ROOM

To the designs of Raymond McGrath, Esq., B.Arch., A.R.I.B.A., we made the revolving chairs in the Balance and Control Room, the tables, trolleys, etc., for the Refreshment Room. We illustrate one of the revolving chairs on this page.

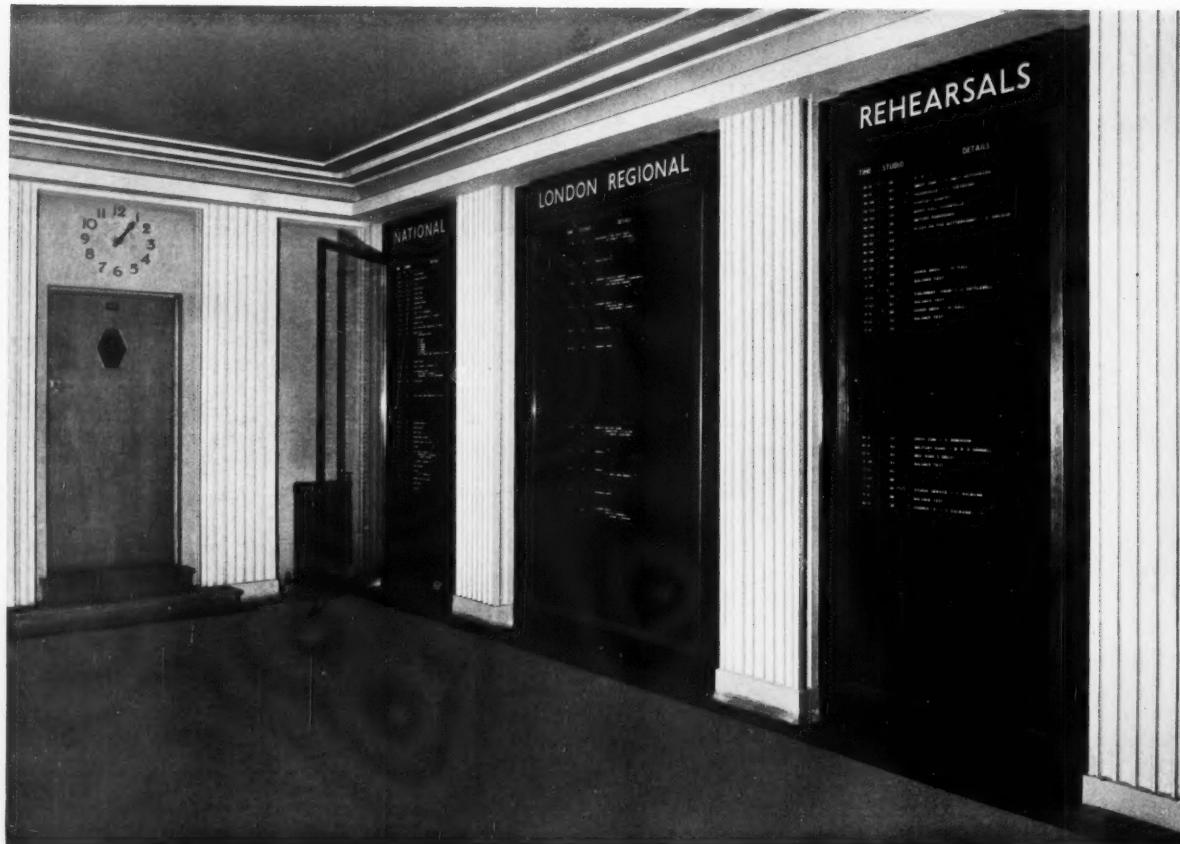


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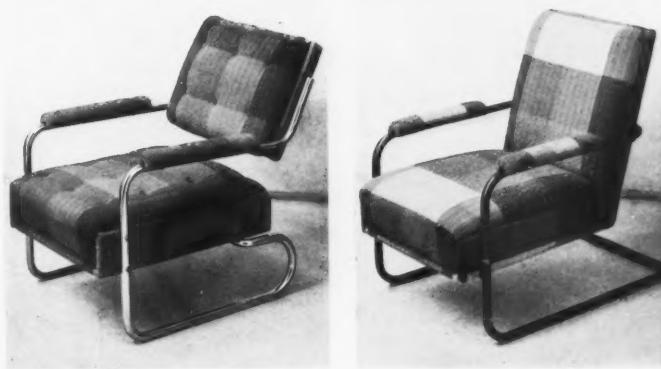
HOLBORN
3 2 1 3

STEEL FURNITURE at BROADCASTING HOUSE



Much of the steel furniture at Broadcasting House was made to the Architects' instructions by PEL LTD. at Oldbury, Birmingham.

The Nesting Chairs of tubular steel, cellulose finished, shown in the top illustration were supplied to studios at Broadcasting House in London and Edinburgh. In the centre illustration we get a glimpse of Orchestral Studio 8A, Broadcasting House, London, Architect, Serge Chermayeff. The two lower illustrations show armchairs with tubular steel frames, finished copper satin and chromium plate, designed by Serge Chermayeff and made by PEL LTD.



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Decorative Fabrics



Many of the fabrics used for curtains, hangings, and upholstery at Broadcasting House were supplied by Donald Bros., Ltd., and were either made to the architect's own design or selected from the standard range.

"Mowear," made from South African Mohair yarns, has hard-wearing, dust-resisting qualities, and was used for upholstery in many studios and as a wall covering in the Green Room.

"Chelsea Stripe," a heavy-quality, woven-cotton fabric with a standard pattern in bars and stripes in a range of 4 colours was used for curtains in the Green Room (see colour plate No. VIII) and the Council Chamber.

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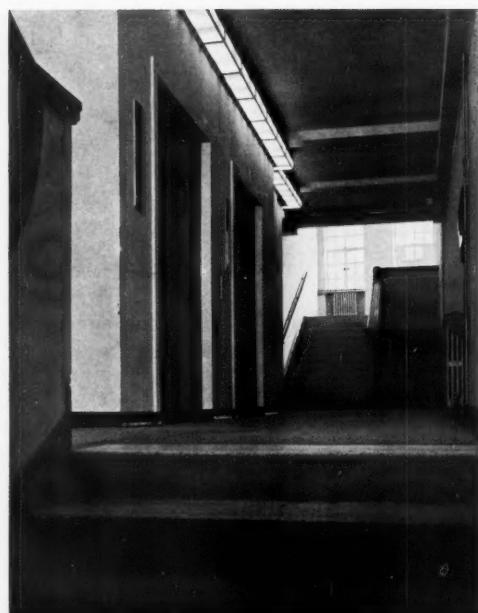
TUBULAR STEEL OFFICE DESK AND CHAIR, IN BRUSHED COPPER FINISH. Designed by Raymond McGrath, Esq., B.Arch., A.R.I.B.A., for Broadcasting House.

For photographs showing the special Standard Lamps, Ash Receptacles and Wall Ash Trays made by us to the Architect's designs, see editorial pages 55, 61, 64, 67.

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Broadcasting House

the TERRAZZO STAIRCASES and FLOORS



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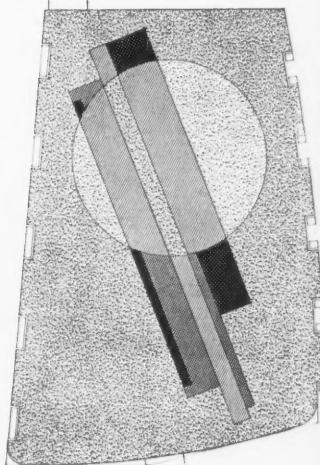
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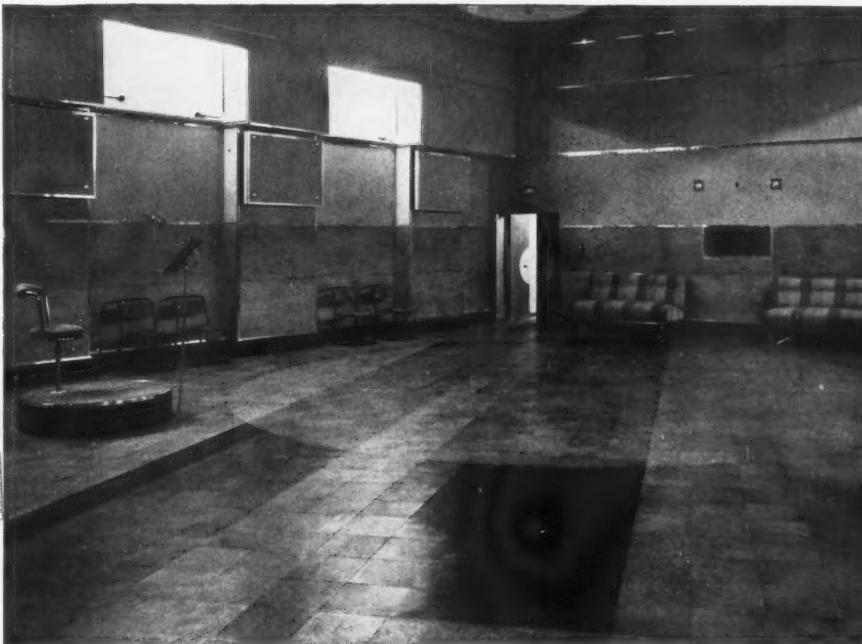
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BROADCASTING HOUSE



Sketch design of the floor in Studio 8A carried out in 5 shades ranging from light birch to ebony.

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Studio 8A, Broadcasting House

Architect: Serge Chermayeff, Esq.

JOHN ELBO

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SPECIAL FURNITURE at Broadcasting House

The Council Chamber furniture (here illustrated) was designed by Raymond McGrath, Esq., B.Arch., A.R.I.B.A. The table tops of laminated wood veneered with Australian Walnut wax polished are segmental in form, and are supported on circular fluted columns of the same wood. To the designs of the same architect we also manufactured the special furniture in the Green Room, The Board Room table and some of the mobile gramophone unit cabinets made in ebonised mahogany.



The furniture in the offices of Mr. Siepman and Major Murray designed by Serge Chermayeff, Esq., was also made by us at our London factory.

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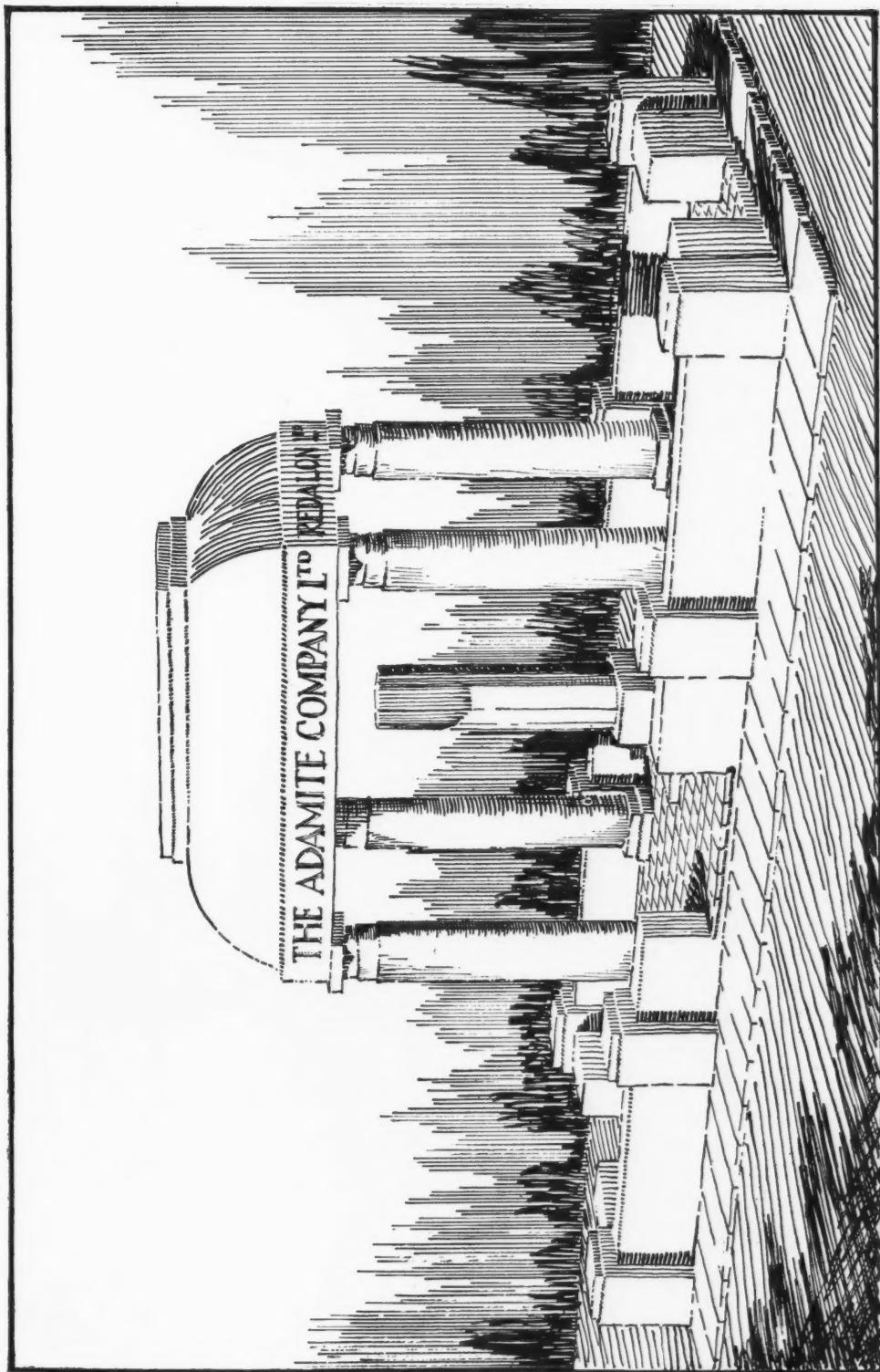
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Constructed by: Beck & Pollitzer



Architects : Messrs. Mitchell & Bridgewater, A.A.R.I.B.A.

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Notes on Veneers

SINCE wood was first used for building and decorative purposes it has been a source of constant annoyance to designers and joiners, who have been compelled to invent all manner of devices in an attempt to control this obstinate material, and counteract its tendency to twist, or shrink and swell, under changing atmospheric conditions.

The practice of veneering was evolved in order that use might be made of woods that are unreliable in the solid, and also those that are rare and costly, or unobtainable in large sheets. Such woods may be cut into veneers and applied to laminated board or plywood, at no great expense, to provide a beautiful and efficient material.

The use of veneers is by no means new; in Tutankhamen's tomb boxes were found covered with choice wood, and for thousands of years the principle of slicing rare woods into sheets for the covering and enhancement of a less beautiful, but more reliable variety of the same material, has been recognized and practised.

In the notes on wall coverings in the February number of the REVIEW, I stated that most veneers come from abroad, and, with the popularization of new kinds, in increasing quantities from the Empire. This is generally the case; the bulk of inexpensive veneers come from countries where labour and, consequently, cutting is cheap, and there are many firms that, without qualification, and with the sole interest of making a profit, purchase finished veneers from abroad without any understanding of the material that they buy.

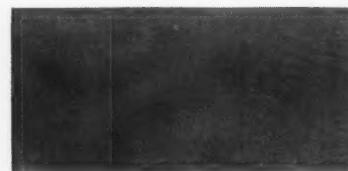
The British manufacturers are justified in their indignation at this procedure, not only because their own sales suffer, but because indiscriminate handling of veneers, and their recommendation and employment for purposes to which they are unsuited, does much to discredit an excellent material.

BEFORE an architect specifies a particular veneer he should make certain that it is capable of doing the work which he intends to impose upon it. If he be ignorant of the nature of the particular wood he should consult a specialist. Bona-fide veneer-cutting firms are always willing to give expert advice, and to act upon this may save a great deal of unnecessary disappointment and expense. For instance, the manufacturers know that certain veneers are not suited to all methods of polishing. I am told that some woods behave perfectly under a wax polish, but under a cellulose finish are liable to produce surface cracks because the coefficient of expansion of cellulose differs from that of the wood.

In earlier times veneers were cut by saw and by hand, and were very thick and much wood was wasted. Today the log or flitch is generally sliced by a knife, or, if a large sheet of veneer is required for plywood or constructional work, cut in a rotary manner by a machine in which the complete log, minus its bark, is turned as on a spit against the knife, which gradually advances towards the log as the latter diminishes in size. By the latter method, with careful cutting, the log may be converted into sheets of veneer 10 or 12 ft. long and 6 ft. wide, but rotary-cutting as a rule produces a wild figure—birch and bird's-eye maple are exceptions—whereas flat cutting, especially on the quarter, produces a figure that is straight and even.



Example of No. 15 Ideal Rayrad fitted beneath window.



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Wood is sawn only when it is either too hard or too "curly" in the grain to be cut smoothly by a knife, or when a veneer of larger dimensions than can be conveniently cut by knife, and not suited to rotary cutting, is required.

Very hard woods, such as tulip wood, kingwood, ebony and satinwood, and highly-figured woods such as Puerto Rican satinwood, figured Spanish mahogany, etc., are usually sawn. In fact, as a general rule, in this country we saw all wood which will not cut smoothly, but on the Continent it is the custom to cut almost all woods with the knife, and as a result the grain is often torn and distressed.

Flat cutting or slicing is the most important method where decorative woods are concerned. The selected flitch is fixed on a heavy iron table within the machine. The knife, which has a length of 7 ft. to 10 ft., and is capable of very fine adjustment, is mounted upon a large iron carriage which slides backwards and forwards across the table. As the machine operates the table is automatically raised by the thickness of the veneer which is to be cut, and the knife, coming forward, slices off the veneer, always across the grain, in the same way that a plane takes off a shaving.

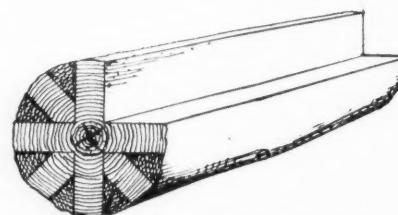
Oak, mahogany, and walnut are generally favoured for veneer work, possibly because in the selection of woods architects generally give preference to those that can be employed both as veneers and in the solid. However, it is possible by the exercise of a little initiative to use

side by side rare veneers and commoner woods to produce excellent results.

It is well to bear in mind the too often overlooked fact that it is impossible, in the majority of cases, to obtain a wood that is absolutely true to sample, and the architect who wishes to be certain of getting exactly what he requires should visit the veneer factory, select a sheet of veneer, and insist that the remainder of his order be made up of wood from the same bundle. Only by this means can he be sure of uniform grain and colour.

One learns a great deal by visiting the mills of veneer cutters, and Messrs. John Wright and Sons are always willing to conduct architects over their premises where cutting operations and almost every variety of finished veneer can be seen.

In order that a veneer shall have a smooth surface it is sliced on the quarter. The diagram below indicates the manner in which the log is quartered into flitches, and if veneers are cut from



A log quartered into flitches from which VENEERS are cut.

logs converted in this manner a perfectly smooth and well-figured surface will be produced.

Before the flitch can be cut it must be warmed (steamed or boiled), and great skill on the part of the operative is essential to the success of this procedure. He must know exactly how to treat each individual piece of wood, the temperature it requires, and the length of time necessary for such temperature to be reached.

The best solid core for general veneering is quartered whitewood, or for the very best work quartered Honduras mahogany. In such work the core is first cross-veneered, with American whitewood or mahogany, to prevent the slightest movement of the groundwork affecting the surface veneer.

A panel should be veneered on the reverse side to counteract the pull of the face veneer.

When a plywood or laminated board is used as a base for large veneered panels, it should have a core of gaboon.

No surface can be guaranteed to stand highly finished shellac polishing. If the wood expands or contracts, as it is bound to do, and the coefficient of expansion of the polish is not identical with that of the wood, a surface rupture is certain to occur. If the surface be waxed and polished there is no danger of such surface cracking, and there is no interference with a gradual toning down of the wood, nor is the natural beauty of the grain impaired by glossing over as it is when french polish is employed.

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WOODS

OAK

Distributed throughout the world are something like three hundred species of acorn-bearing trees of which British oak is undoubtedly the best from a practical point of view. There are two varieties of British oak, *quercus pedunculata* and *quercus sessiliflora*, the latter being a darker and heavier timber, more elastic and less easily split.

From North America come red oak and white oak, the red with an objectionable colour, and the white with a figure so coarse that it is never used in decent work.

From the Continent—Austria, Poland and Russia—we get a quite good oak; from Australia an oak with a monotonous figure, full of "blobs."

Japanese oak is a dense wood with a delicate figure; it is used largely in mass-production work, veneering for plywood, etc., as the grain and figure are well suited to jointing and panelling.

MAHOGANY

Perhaps the revolt against Victorianism has been responsible for the decline in popularity of mahogany, which is in many respects an excellent wood; it lends itself readily to working and finishing, and preserves its tone and condition in such adverse climatic conditions as smoke, damp, fog and heat.

There are two main groups of mahogany. The first, the *Swietenia*, comprises that from tropical America and the West Indies, and includes Cuban (sometimes called Spanish), St. Domingo, Belize, Honduras and Tobasco. The second, the *Khaya* group, from the West Coast of Africa, 15° N. to 20° S. of the Equator, includes Sapele, Lagos, Grand Bassam, Grand Lahou, Nigerian and Assine, etc.

West Indian varieties are harder than the American and will take a better finish. Cuban is recognized as the best, but is becoming scarce, and few logs remain that are fine and large enough for veneer cutting.

The African mahoganies, being more quickly grown, are usually softer in texture, and although the figure is beautiful it has not the lasting quality of Cuban or Honduras, and whereas the latter improve in time and by exposure, the former tend to fade.

Where the heart of a branch joins the tree a curl is formed, and this is greatly prized for its figure, which is made more attractive by polishing, but it is liable to crack or open on the surface, particularly the beautiful African curl. The Cuban and Honduras curls are moderately safe but cannot be guaranteed against ultimate defect.

Sapele mahogany has a straight stripe, Honduras a rich "roe," often broken by a cross figure, and Cuban has a bee's wing figure.

WALNUT

English grown walnut, although splendid in colour and figure, is prone to ring shakes, and frost shakes, which appear as defects in the veneers.

The commercial walnuts are French, Italian (including Ancona), American, Australian and Circassian. The Italian wood has a darker and richer colour than the French. American walnut is much straighter in growth than the European varieties, and has not their diversity of colour and beautiful figure. It has a purple-brown colour, and is rarely used for conversion into veneers. It is, however, frequently cut into boards and planks, and makes excellent parquetry.

The walnut burr is a gnarled, warty excrescence; a disease caused by mechanical injury to the cortex, and is formed by a number of adventitious buds which, though capable of growing in thickness, are insufficiently nourished to grow in length. The burr provides a creamy or light brown veneer, usually of excellent quality, and free from the defects that often develop in richly coloured wood.

The varieties of figure in walnut are multitudinous, and the wood can rarely be true to sample. Personal inspection of a log or bundle is essential if the designer desires a particular colour or marking.

SYCAMORE

Sycamore, a very hard white wood which reaches perfection in England, is

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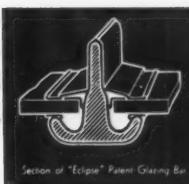
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capable of taking a beautiful and lasting finish. The English variety often exhibits a nicely mottled figure.

Grey sycamore or harewood is obtained by immersing the sycamore veneer in a solution, in which a chemical action, induced by the acids in the wood, produces a delightful silver-grey colour. This colour may not be permanent, for the wood itself, being white, must in time, by action of light and air, change to a yellowish-brown and the grey colour, in consequence, to a greenish shade.

BIRCH

Birch veneers are generally used as a facing for high-grade commercial plywoods. The log will, however, if finely figured, provide a very beautiful veneer, which was at one time used in this country for furniture. It is an inexpensive wood and, perhaps because of this, its use has been revived, and it has recently been employed with splendid results as a wall covering. Birch is cut in a rotary manner so it can be obtained in very large sheets.

MAPLE

Bird's-eye maple comes mainly from North America. The logs yield a dense, cream-coloured, lustrous wood, capable of taking and retaining a brilliant finish. The wood is rotary cut, and veneers of large dimensions are obtainable, which is fortunate as jointing is somewhat difficult because the bird's-eye markings can rarely

The Architectural Review, September 1932.

be arranged to group well at the edges. A stout veneer, $\frac{3}{8}$ in. thick, should be used, otherwise glue may come through and discolour the face of the wood.

Rock maple has no "eyes," but is often beautifully mottled. Plain maple, cut into blocks, is well known as an excellent covering for floors.

THUYA BURR

Thuya, or Arbor Vitæ, is a rich-coloured, rather cross-grained burr from French Northern Africa. It compares favourably with the rare and beautiful Amboyna, but whilst the former is reddish-brown, Amboyna is a golden colour.

Thuya has been used for many years as a covering for fancy boxes and cigarette cases, but has only recently been employed for covering large surfaces. The burrs can be obtained in quite big pieces, and are particularly free from bark ingrowths, holes, and other defects which necessitate patching.

Among the English veneers are yew, golden pink in colour; cherry, pinkish brown; pear, rather like cherry, though somewhat darker in colour; and holly, which is a white wood.

From the Empire come many varieties. India provides laurel, a rich, dark, finely-marked wood; silver greywood, which has a rather dirty colour, ranging from brown to brownish grey; and Macassar ebony, fine in grain, with contrasting stripes of black and gold.

From Australia come mountain ash, light fawn in colour, with a rippled grain; maple, which has a surface resembling moiré silk, light mahogany in colour; and blackwood, like a dark teak, with fiddle markings.

Angelique, from Central South America, has a reticulated effect in dark brown and yellow, resembling snake skin.

Zebrano is striped; malapo has a golden ripple grain. Amboyna, a beautifully mottled, yellowish gold burr, very hard, valuable because of its rarity, is exported from Amboyna in Dutch New Guinea.

Tulipwood, from Brazil, is very hard and dense in the grain. It has a lustrous pink surface which takes a splendid polish, and is used a great deal for inlay work. The tree is small, and veneers range from 2 ft. to 4 ft. long and 3 in. to 10 in. wide.

Kingwood, also from a small tree, is very hard, purple in colour, and otherwise very like tulipwood.

There are many other interesting woods, but I have no space in which to discuss them here, and must recommend those who are interested to obtain, from Messrs. John Wright and Sons, Mr. Jenkin's excellent little booklet *A Veneer in the Making*, to which, with the author's permission, I have referred for a great deal of the information contained in these notes.

F. R. S. YORKE.

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Notes on Facings for Steel and Concrete Buildings

THE colouring of concrete, and indeed the production of a really white concrete or rendering, has been hampered in the past by the lack of a pure white aggregate for use with white cements, the whitening properties of which do not altogether counteract the discoloration caused by brown and silver sands. Today, however, a perfectly white silica sand or aggregate is produced by a special process in which flints are reduced to a particularly hard and durable material, which is graded from $\frac{1}{2}$ in. downward, and supplied at a competitive price.

The aggregate for a surface to be chiselled, rubbed or polished, must be quite small; particles exceeding $\frac{1}{4}$ in. will entail increased labour in surfacing. An aggregate graded from $\frac{1}{8}$ in. to $\frac{1}{4}$ in. is usual, and a typical specification for concrete made from stone is:—

$\frac{1}{2}$ parts crushed Portland stone $\frac{1}{4}$ in. to $\frac{1}{8}$ in.,

$\frac{1}{2}$ parts crushed Portland stone $\frac{1}{8}$ in. downwards,

1 part white Portland cement, and such a formula holds good, as a general rule, for any type of stone, by changing the aggregate and colouring the cement to match it with mineral oxides.

I learn however that artificial Portland is actually made from a 3:1 ratio of finely crushed light coloured granite—from Norway—and it does seem unreasonable that architects should persist in demanding imitations of natural stone, whilst on the Continent considerable progress is being made in the combination of unusual but inexpensive materials as aggregates, and we in England have vast quantities of raw material in our quarries; many charmingly coloured stones, some of which are of little use as building materials in their natural state, owing to their being unobtainable in large blocks or because they have pitmarks or "faults," but which lend themselves admirably to crushing for aggregates.

The following list, which is by no means exhaustive, of the principal British building stones is taken from the 1928 edition of Specification.

LIMESTONES

Ancaster (Lincolnshire), cream.
Anston (near Sheffield), deep cream.
Beer (South Devon), brown and cream coloured.
Bolsover (Notts), yellow.
Chilmark (Wiltshire), light cream and yellowish-brown.
Clipsham (Rutland), cream.
Doulting (Shepton Mallet), light brown.
Dundry (near Bristol), warm cream.
Edith Weston (Ketton), cream.
Ham Hill (Somerset), deep rusty brown.
Hopton Wood (Derbyshire), creamy white and grey.
Hornton (Banbury), rich brown: also blue with brown markings.
Ketten (Stamford), dark cream.
Purbeck (Swanage), light grey.
Roche Abbey (Rotherham), whitish-cream.
Weldon (Kettering), rich creamy white.

SANDSTONES

Blue Pennant (Glamorgan).
Bramley Fall (Leeds), light ferrous brown.
Casterston (Stamford), warm cream.
Corncockle (Dumfries), rich red.
Corsehill (Annan), rich red.
Coxbench (Derbyshire), white and light brown.
Craigleath (Edinburgh), whitish grey weathering dark grey.
Crowhall (Durham), light brown.
Darley Dale (Bakewell), grey, pink and brown.
Forest of Dean (Glos.), blue and grey.
Halifax Hard Blue (Bradford).
Heworth Burn (Durham), light blue.
Hollington (Staffs), white and red.
Howley Park (Leeds), light brown.
Huddlestane (Yorks), whitish cream.
Kentish Rag (Maidstone), blue-grey, and greenish-grey.

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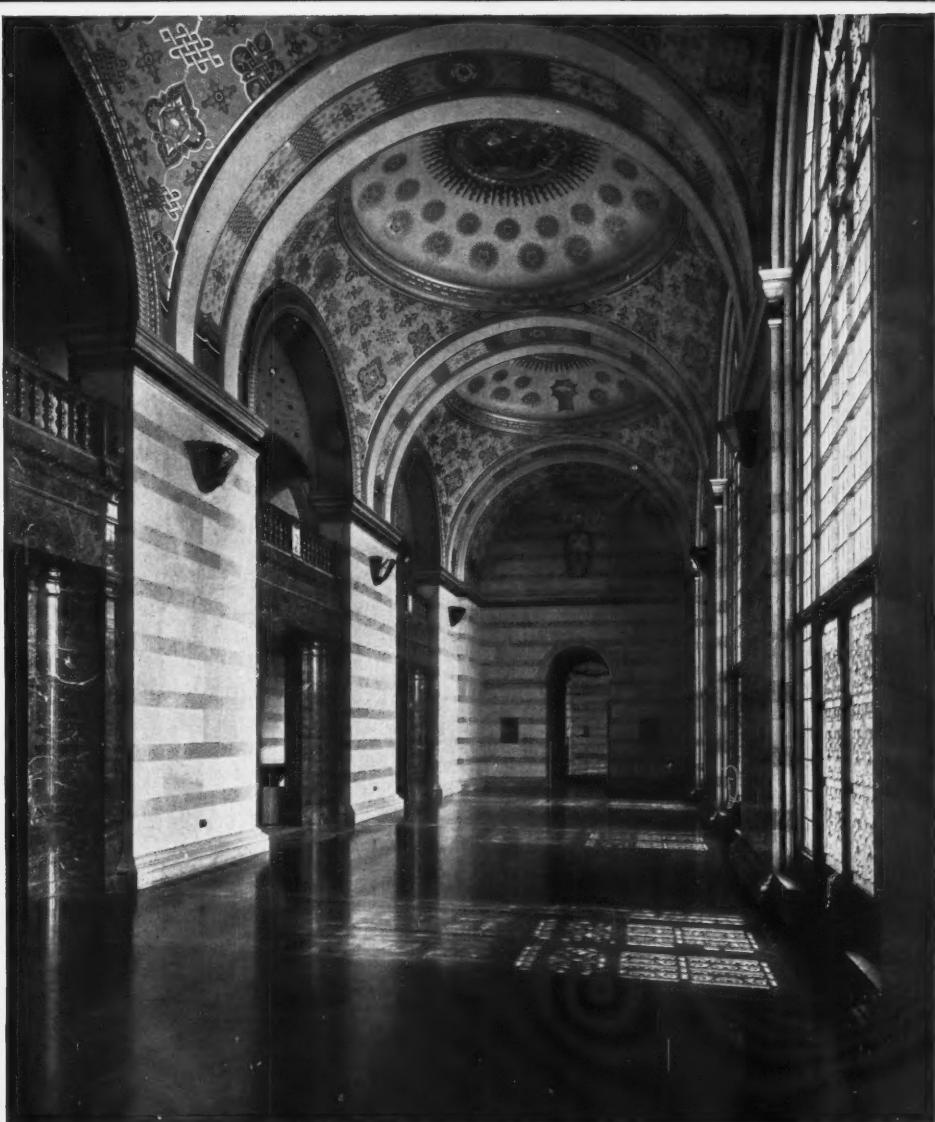


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Little Eaton (Derbyshire), red and white.
 Mansfield (Notts), red, deep rosy brown, white and yellowish-white.
 Matlock Bridge (Derbyshire), warm brownish grey.
 Mount Charles (Donegal), warm cream.
 Old Stantonford (Staffs), warm cream.
 Peasenhurst (Chesterfield), warm cream.
 Penkridge (Staffs), mottled red.
 Pennant Stone (near Bristol), slatey-blue.
 Prudham (Northumberland), light brown.
 Quarrella (Glamorgan), white and green.
 Red Wilderness (Glos.).
 Robin Hood (Wakefield), light blue.
 Scotgate Ash (Yorks), white and brown.
 Shamrock (County Clare), French grey.
 Spinkwell (Bradford), light coloured.
 Stainton (Durham), light ferrous brown.
 Whitby, light yellow to dark brown.

In addition to these we have yellow-grey, greenish-grey, and whitish-grey granites from Penryn, Penzance, and St. Austell in Cornwall; Scotch and Irish granites, and other granites, at present generally used for road metal, from Leicestershire and the Channel Islands. We have the golden-orange streaked black Ashburton marble from Devonshire, Purbeck marble, the Derbyshire marbles and Cornish serpentine. Our vast stone reserves are almost untouched; yet in spite of this our imports of foreign stones, granites, and marbles are, or were until recently, continually increasing.

If the aggregate selected be expensive, or additional cost be incurred by the use of coloured, instead of ordinary Portland cement, a thin skin may be employed, simply as a facing, backed by ordinary concrete. By means of a movable metal

plate, arranged from $1\frac{1}{2}$ in. to 2 in. from the inside of the outer shell of the shuttering, a narrow slit is formed, and into this the facing material is poured, whilst the wider cavity behind is filled with concrete, and as the filling proceeds the plate is raised so that there is proper cohesion of the two mixes.

* * *

An interesting, though not wholly successful experiment—for the material has not weathered well—in the use of reconstructed marble occurs at the new Dorchester Hotel, where the walls are of reinforced concrete lined externally with 2 in. thick slabs, having a $\frac{1}{2}$ in. facing of a mixture of white cement and Botticino marble chippings; ground with carbondum and polished. The slabs were erected in courses, and ordinary wood shuttering, supporting cork slabs, was erected behind them at a distance governed by the required wall thickness. The reinforcement for the wall was then placed between the concrete slabs and cork lining, and the concrete poured, the steel rods used in the slabs, and projecting from their rear faces, serving to anchor them to the wall. Economy in construction was thus effected by the employment of cast slabs as external wall shuttering. The cork lining acts as a sound and temperature insulator.

* * *

Pumice, because of its lightness, stability, and relatively low thermal conductivity, has many advantages as an aggregate.

It is an igneous rock which, liquid at the time of eruption, cooled and solidified so rapidly that the suddenly released vapours in it swelled it up as a froth, in which form it then consolidated, forming a cellular, sponge-like, siliceous substance full of pores, combining considerable crushing strength with remarkable lightness. Containing no combustible minerals and being almost completely free from soluble salts; a natural combination, principally of silica, alumina, iron oxide and calcium oxide, it remains chemically neutral under the action of water or heat.

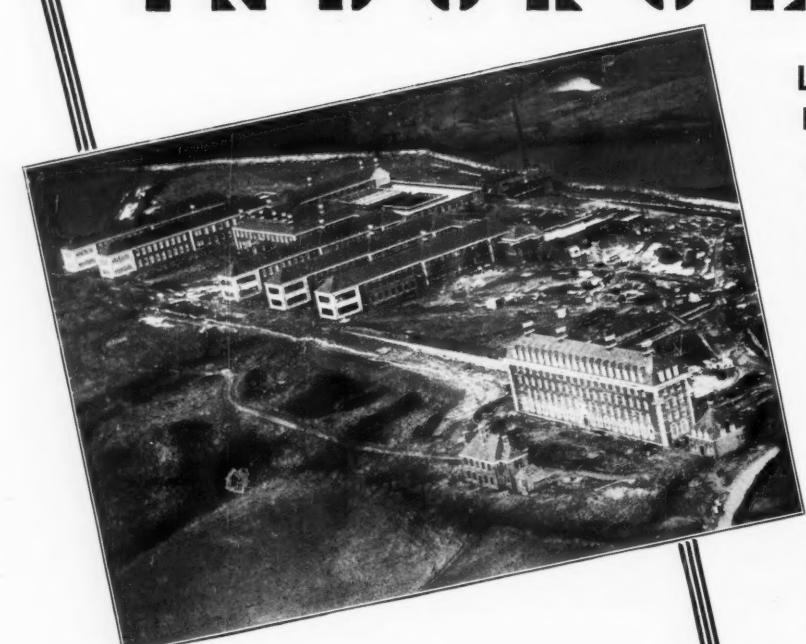
Pumice may be obtained either in the form of concrete blocks—made from Portland cement and natural granular pumice—ranging in size from 18 in. by 9 in. by 4 in., to 24 in. by 12 in. by $1\frac{1}{2}$ in., or as a natural aggregate for *in situ* work, etc.

Pumice concrete weighs about 48 lb. per cubic foot, whilst broken brick concrete weighs 125 lb. and limestone concrete 144 lb. Its specific gravity is 0.64; 24 yds. of 3-in. blocks going to the ton.

The blocks, having matured for several months in open-sided and solidly-roofed drying sheds, will neither expand nor contract. The material, plastered or unplastered, may be painted with oil or water paints.

It is unshrinkable, its texture permits direct nailing without the need for plugging, and it is claimed that a 3-in. partition is at least equal in strength to a $4\frac{1}{2}$ in. brick wall, and is approximately 25 per cent. less in cost.

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COLOUR

The first coloured cement to be produced commercially was a proprietary brand of white Portland cement, marketed under the name of "Atlas White." In addition to this there are now "Snowcrete" and "Snowcrete (No. 2) Cream," which have been on the market for some years, and I believe two or three other proprietary brands.

Portland cements in other colours consist of white cement to which mineral pigments have been added. As these mineral pigments are inert, non-adhesive, and non-agglomerative, their weight must be restricted to 10 per cent. of the weight of the white cement with which they are mixed. Any admixture in excess of this would impair the setting strength of the concrete.

* * *

Rapid hardening cement, as the result of recent experiments, is now available in a full range of colours, suitable for any type of concrete work. The colours are based on mineral pigments and therefore should not fade. They have no deleterious effect on the setting powers of concrete.

Some of the colours, the buffs and iron-oxide reds in particular, appear excellent in the samples, but I have not yet seen their application over large areas in an actual building scheme in this country, and how they will stand up to our climate remains to be seen. In clear, sunny climates, such as the Riviera and South

Africa, some of these tints have proved quite satisfactory, but coloured cement as generally used in Middle Europe presents a somewhat drab and monotonous appearance where it is applied over large surfaces.

When a concrete surface is hammered or tooled to expose the aggregate, the cement, which is the binding agent, will, of course, be visible, and coloured cements are particularly valuable in that they permit the selection of a tint which will harmonize with the predominant colour of the aggregate.

* * *

"Tintocrete," a specially treated neat cement, obtainable in a variety of colours, may be applied by means of an ordinary high-pressure paint-spraying plant to various types of surface, giving a hard and durable finish to which dust and dirt will not readily adhere. A special treatment imparts to the cement mobile or flowing properties, and minimises the danger of crazing and efflorescence. The cement, after setting, has remarkable adhesive and elastic properties, and is waterproof.

Unfortunately the almost unlimited scope of the material, which the merchants tell us can be employed to produce "shot effects," and the decorative instincts of so many designers, render it liable to much abuse.

RENDERING

According to a recent report on the cracking of renderings, from the Informa-

tion Bureau of the Building Research Station:—

"It is an extremely difficult matter to ensure that no cracking will occur, and it is very much open to question whether, in the present state of the knowledge of the subject, it would be possible to guarantee complete immunity from cracking, even if all the precautions were observed which could reasonably be suggested.

"The problem is a complicated one; cement renderings may be said to crack in one of two ways: (a) Major cracks, which extend right through the rendering, due to shrinkage over a comparatively large area; (b) a network of small cracks, usually known as 'crazing,' which may be confined to the surface and not extend right through the rendering. The subject of 'crazing' of cement products is under investigation at this Station, but the data at present available are not sufficient to make possible a final pronouncement regarding its prevention. It may be stated, however, that the precautions which should be taken to eliminate the formation of major cracks will also assist in reducing the formation of 'crazing.'

"The defects of cracking and crazing are primarily due to the property possessed by all cement products of shrinking as they dry out. The amount of shrinkage depends upon the amount of cement present, and consequently, within limits, it is preferable to avoid the use of excessively rich mixes. The nature of the

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background which is to be rendered is also important; numerous failures of renderings over brickwork containing large amounts of soluble salts have been reported. In certain instances it has been found impossible to apply a rendering to brickwork of this kind despite repeated attempts. The moisture content of the brickwork is also important; obviously it should not be excessively dry, but it appears from reports that have been received that work done under very wet conditions is more liable to failure than when weather conditions are normal; this may perhaps be due to physical changes set up by large variations in the moisture content of the wall as a whole.

"The precautions suggested are:—

"(a) If the wall is very dry, care should be taken to wet down before applying the rendering. If excessively wet, time should be allowed for a certain amount of drying-out before rendering.

"(2) Sand should be clean and well graded from coarse to fine. Uniform particle size and excessive fineness are factors which will call for a high cement content, and this is undesirable.

"(3) The mix should not be unduly rich: $2\frac{1}{2}$ to 1 by volume should be regarded as the maximum permissible degree of richness and 3 to 1 with a well-graded sand would be preferable.

"(4) Curing and maturing conditions should be carefully controlled. The work should be kept moist by frequent wetting-down for a period of at least 10 days. Particular attention should be given to

this if the weather conditions are such as to give rise to rapid drying.

"(5) Excessive trowelling brings a rich skin to the surface, and should be avoided. No more water should be used than is required to bring the mix to a suitable plastering consistence.

"An experimental area of rendering on a wall at this Station, composed of equal parts by volume of grey and white hydrated lime with suitable sand has proved completely successful and shows no sign of cracking or crazing."

It is believed that crazing is not entirely due to shrinkage in "drying out," but that it is to some extent caused by a chemical change in the composition of the external skin.

The 1932 Report of the Building Research Station deals with this matter at some length.

RETARDING LIQUIDS

The main arch of a bridge in Berne, by M. Maillart, is constructed with interlocking blocks of reinforced concrete, with a 4 : 1 aggregate of White Solothurn and Green Brigue stone, which was found to give a mellow creamy-white tint. The warm and sparkling texture of this aggregate was exposed by "Contex," a liquid which, applied to the inside of the shuttering, retards the setting of the outer skin of cement, and enables it to be washed off with a hose. The resultant roughened surface so improved the bonding qualities of the blocks that it was applied to all of



TWO CONCRETE BLOCKS with the aggregate exposed by retarding liquids, taken immediately after the forms had been removed and the cement surface washed off. The photograph is reproduced by courtesy of *The Concrete Way*.

them, irrespective of whether they would be visible in the completed structure.

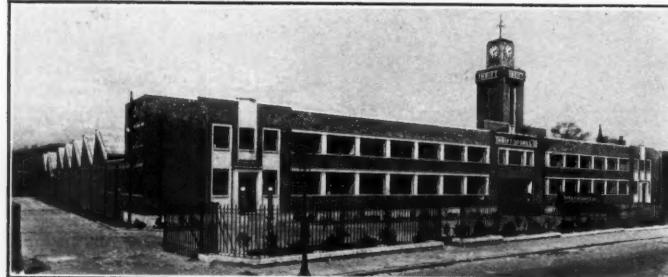
"Retardo" and "Redalon" have similar properties, but in England retarding liquids are employed as a rule with the object of providing a good key for rendering rather than to expose the aggregate to produce a pleasant surface. I am not certain whether this is because the British processes fail to produce a surface that is worthy to stand uncovered, or whether the fault lies with those who are responsible for the selection of the aggregate: exposed shingle and gravel aggregates are inclined to give an unpleasant roughcast-surface effect.

* * *

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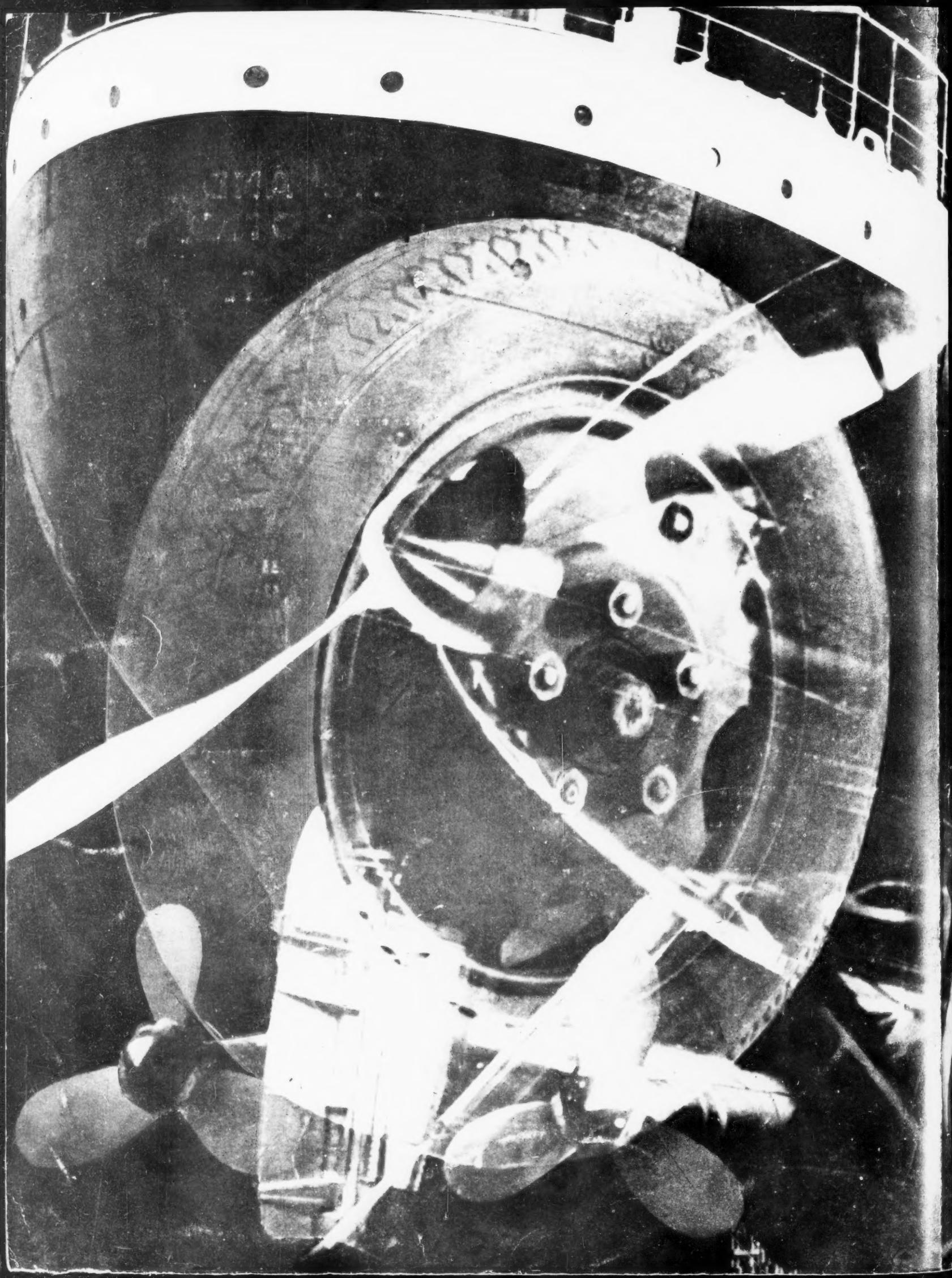
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Notes on Clocks

By F. R. S. Yorke

THE mechanism of the clock comprises an assemblage of geared wheels and pinions, propelled by a weight or spring, and equipped with some form of governing device which controls the speed to keep it uniform. The clock was originally contrived in order that time might be measured with accuracy, and the striking action was the first consideration. It is supposed that many early mediæval clocks had neither dial nor hands, but were equipped with striking mechanism which told the hours and sometimes the quarters.

The early clocks were, as a rule, fixed, and of considerable size. The geared wheels were kept in motion by means of weights, and, because these fell vertically, ample space was required below the mechanism.

Until 1500 the domestic clock was almost unknown. In that year Peter Henlein, employing an expanding spring coiled within a drum, discovered a new motive power to replace the weight, but the principle was not perfected until some time later—about 1525—when a device for equalizing the variable power of the

coil in its several degrees of tension was evolved.

From this time the small portable clock, enclosed in an elaborate metal case, was made in Germany, and to some extent in France and Holland, and was imported into England, but was still so expensive as to be within the reach of only the comparatively wealthy.

In the middle of the seventeenth century Vincenzo Galilei, by a practical application of the principle of the pendulum—the isochronous property of which was first discovered by his father Galileo Galilei—revolutionized horology by employing this medium as a regulator, in place of the balance which had up to this time performed the governing work. He erected the first pendulum clock in Venice in 1649, and the domestic pendulum clock was introduced into England, from Holland about ten years later.

As social conditions changed, and punctuality became a more important factor in the lives of a greater number of people, the clock, recognized by this time as a necessity, was produced cheaply, and in large quantities. At the present time

Great Britain imports annually 3,500,000 spring-driven clock movements.

In the past, the British manufacturer concentrated his efforts on the production of clocks for the individual, the hand-made, and consequently expensive article, but he has of late entered the field of mass-production, and is now in a position to sell in competition with the foreigner.

* * *

The clock was generally regarded as a piece of furniture; when the householder moved he took it away with him. Until the present century it was a contrivance of escapements, wheels and springs or weights, and consequently of some bulk. But in clockmaking to-day there is an increasing tendency towards the employment of electricity as the prime mover, and, whilst more and more of the accessories of domestic life, equipment for lighting and heating, furniture, and so on, change in type and are designed as an integral part of the structure of the house, the inception of the electric clock, in which there is an almost entire absence of mechanism, makes it a simple matter for the architect to incorporate the dial in his scheme at the outset, and although a fixed position is not essential, for a portable timepiece may be attached to a length of flex, after the fashion of the electric table-lamp—the new medium suggests a fixed treatment. The designer is no longer required to provide a case or box to cover the clock-works. He is concerned with nothing but the face.

With the advent of the synchronous

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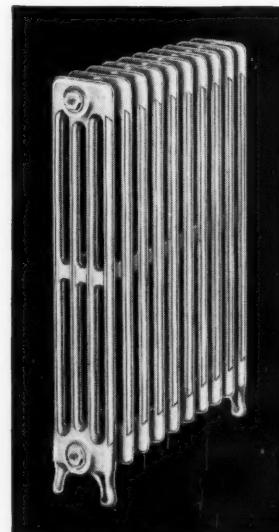
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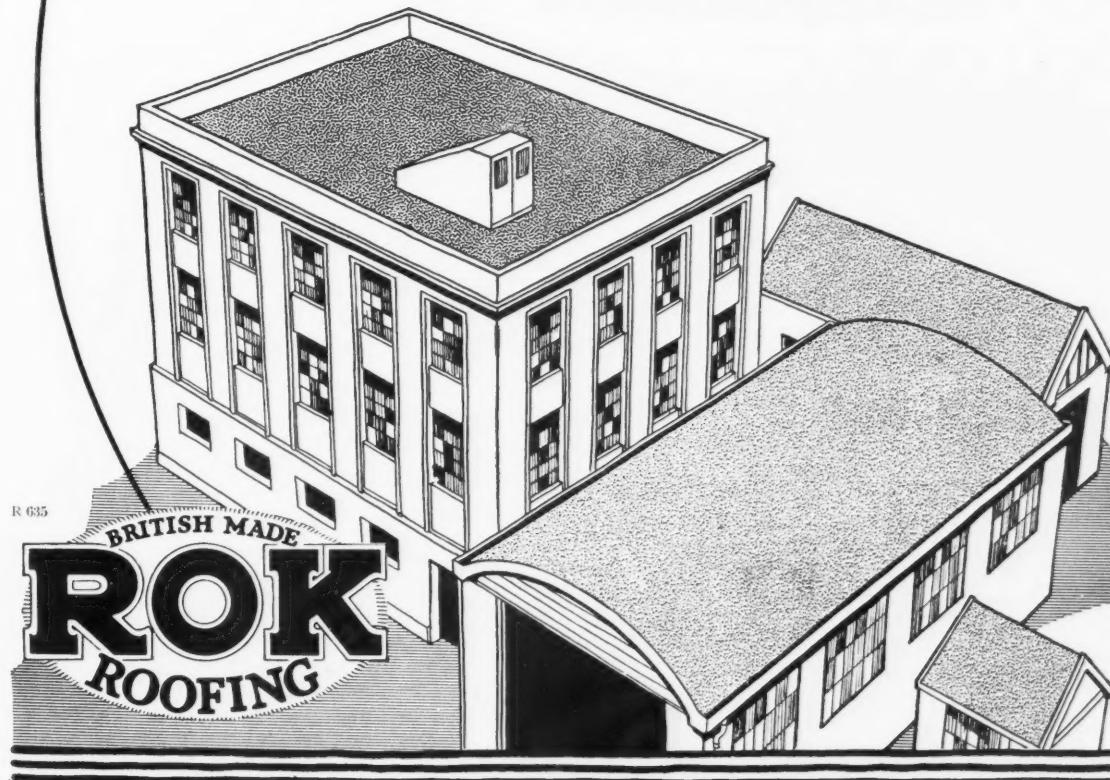
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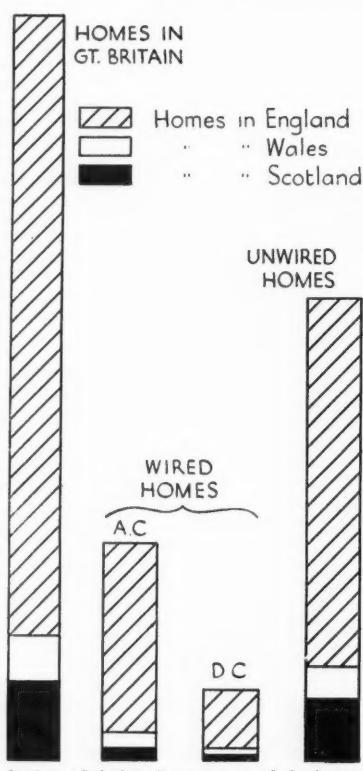
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electric clock, which derives its time-keeping properties from the vibrations in the alternating current of the electric light supply, time-keeping becomes a service, almost in the same way that the telephone and broadcasting are services, for a standard time is transmitted from the generating station to the electricity consumer. Once a synchronous electric clock is connected to the mains, and set correctly, it will continue to record accurate Greenwich time without winding, regulation or attention of any sort. The clock will, of course, stop if the current fails, but a self-starting type will re-start immediately the supply is resumed.

It is significant that 65 per cent. of the clocks sold last year in the U.S.A. and Canada were of a synchronous electrical type. As the clock relies entirely upon electricity for its motive power and accurate time-keeping it is essential that alternating current be available, and that this be accurately time-controlled at the generating station. In the British Isles the Central Electricity Board's grid system is in operation. Already £18,500,000 has been spent in the development of a common network, which will unite all the leading generating stations in such a fashion that the total load of the system may be shared in the most economical manner. The grid operates on the alternating current system, i.e., the flow of power is not continuous in one direction only, but alternates in each direction, and the frequency is such that fifty complete alternations occur every second.



In Great Britain, 38·5 per cent. of the homes are wired, 61·5 per cent. are without electricity supply. Of the wired homes the majority are supplied with alternating current (A.C.).

Reproduced by courtesy of *Electrical Trading*.

This system forms a very convenient means of transmitting standard time to every electrical consumer. The frequency is accurately controlled at the generating station by a master frequency clock, which consists of a Shortt free pendulum movement, kept true to Greenwich by means of wireless signals transmitted at regular intervals. A synchronous or frequency clock is also incorporated, and the time indicated by each of the two types of mechanism is, of course, apparent. Should frequency time be ahead of Greenwich time it is only necessary to decrease the speed of the generators at the power station until the hands of the frequency clock agree with those on the master dial.

All power stations connected to the grid are able to supply to their consumers current which is suitable for synchronous clocks. Many generating stations not yet connected, realizing the great publicity value of such a time service, are installing master frequency control clocks.

When one realizes the portent of such a conception as this grid scheme, the grandeur of the generators and the pylons, and the power of electricity, then one must find it exasperating that a reason for the existence of this organization of power supply, without precedent, may be an imitation of a grandfather clock with its now unnecessary belly—essential once to the swing of the pendulum and the fall of the weights—used as a glass fronted bookcase-cum-cocktail cabinet.

For the clock-face, there is everything in favour of simplified design. The

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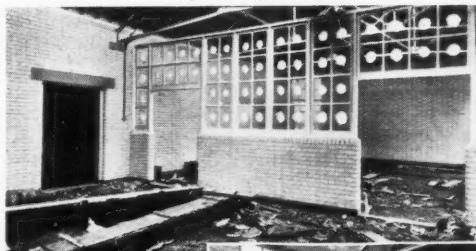
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Service Advertising 26



The motive power of the modern clock is provided by electricity. There is no longer sufficient mechanism to necessitate elaborate casings, yet—
"Insertion clock, chromium plated bevel, silvered dial, dark blue symbols and hands. Down the centre of the hands are thin red lines." *Craftsmen: Gent and Company.*

electric clock itself is of simple construction. The plug-into-mains type, which is obtainable as a portable unit, consists of a small motor which turns at a constant speed. This is connected direct to the hands by means of a chain of gears, which reduce the speed to that required. Standard portable models retail at thirty-five shillings. The current consumption is small, amounting to about one watt per annum.

The electric-impulse type—controlled by a master clock which operates any



—the grandfather clock appears to be as popular as ever.

"Here we have the 'Pretoria' model of the synchronous grandfather clock, which will undoubtedly make a strong appeal to many people. It will be noted that, as no pendulum is required, ingenious use has been made of the space within the solid oak case."

Craftsmen: Smith's English Clocks.

number of dials, and generally accepted as the most suitable for multiple installations—consists of one wheel and a magnet.

When the clock is regarded as a fixed unit, and the dial is designed as a part of the decorative scheme of the room, its position, being permanent, should be decided with extreme care. Because of its decorative value the dial is often given a prominent place above the mantelpiece, incorporated perhaps in a mirror or panel. With the clock in such a position one who faces the fireplace must be constantly reminded of the time; it is as a rule better placed on a less conspicuous portion of the wall.

The latest arrival among the large clocks is that at the new Shell-Mex building. It has two dials, each 25 feet across—the diameter of Big Ben is 22 feet 6 inches.

The twelve hour-marks are formed by castings which project from the white stone face of the building. In order that the time may be easily read the four cardinal points have a lozenge shape and are of considerably greater size than the remainder. This is because if plain strokes be used throughout it is often difficult to read the time about noon. There are no minute marks and the numerals are arranged at the extreme edge of the dial circle—at a greater distance from the centre than would have been possible had the minutes been indicated—with the result that the central area is considerably increased and the visibility of the hands and numerals greatly improved.

Because the numerals stand forward

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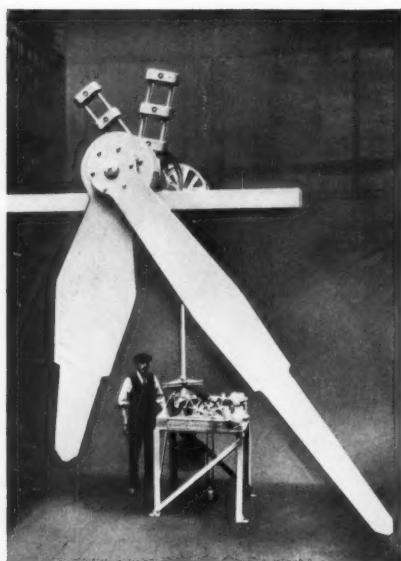
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The hands and mechanism of the clock at the new Shell-Mex building, Thames Embankment, London. Craftsmen: Gillett and Johnson.

several inches from the face of the stonework, and there is no continuous circular band to provide a support for the hands should they deflect under extreme wind pressure, these are self-supporting and exceptionally strong. Both the hour and the minute hand are attached to steel tubes, 4 ins. and 5 ins. in diameter respectively, and ball bearings are used throughout, the

largest bearing being 7½ ins. in diameter. The arrangement of the tubes and ball races is such that there is no possibility of water or dust percolating from outside. Grease-gun lubrication emits a thin film of grease outwards through the small apertures between the revolving flanges and spindles. The ball-race castings are attached to circular flanges and these are cemented into 2 ft. 6 ins. diameter openings in the walls.

The balance weights, which are not in the form of extensions to the hands, but are accommodated inside the tower, are so designed that they may be regulated to counterbalance additional coats of paint that may be applied to the hands from time to time.

The mechanism was specially designed, and as it was considered impossible, owing to the size of the hands, to secure accurate time-keeping with a two-seconds pendulum, a simple arrangement of gears was substituted. The motive power is supplied by a comparatively small weight—about 200 lb.—raised every fifteen minutes by the winding action of a standard electric motor. The weight falls only about eighteen inches between each winding, so the provision of complicated and expensive chute work is eliminated.

Should there be a failure in the supply of electric current from the local mains, the mechanism will continue to operate for an hour or so, and normal winding will be resumed automatically if the current supply be resumed within this margin of time. An electric bell is arranged to give warning of current failure.

The train of gears is controlled by a standard electric master clock with a half-minute impulse. The hand moves forward for a period of about 20 seconds, and then rest until the next half-minute release is due. The speed at which it revolves is controlled by a fan, adjusted to prevent too rapid or jerky movement.

The mechanism is an adaptation of the manufacturer's normal type of tower clock-work, the only difference being an increase in the scantlings of the several members and gears. It has been found that the separation of the timekeeping mechanism from the actual motive power for the hands is the best and most practical arrangement in work of this type and magnitude.

NOTES and ANNOUNCEMENTS

The new West Stand at the Arsenal Football Club Stadium, designed by Claude W. Ferrier, will be officially opened on December 10. The New Stand is one of the few which have an upper tier. It is capable of accommodating approximately 22,000 people, 18,000 standing under cover on the lower tier and 4,000 sitting in tip-up chairs on the upper tier.

The main roof of the new stand is covered by Vitreflex grey enamelled sheets and measures 316 feet by 61 feet span. The Ridge Ventilator is 289 feet by 9 feet span with louvre blades of Vitreflex fixed to steel verticals. The Vitreflex sheeting tones with the general colour scheme adopted by the architect, and by

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Bradford Corporation Electricity Department Power Station Control Room
Engineer: THOMAS ROLES, M.I.E.E.

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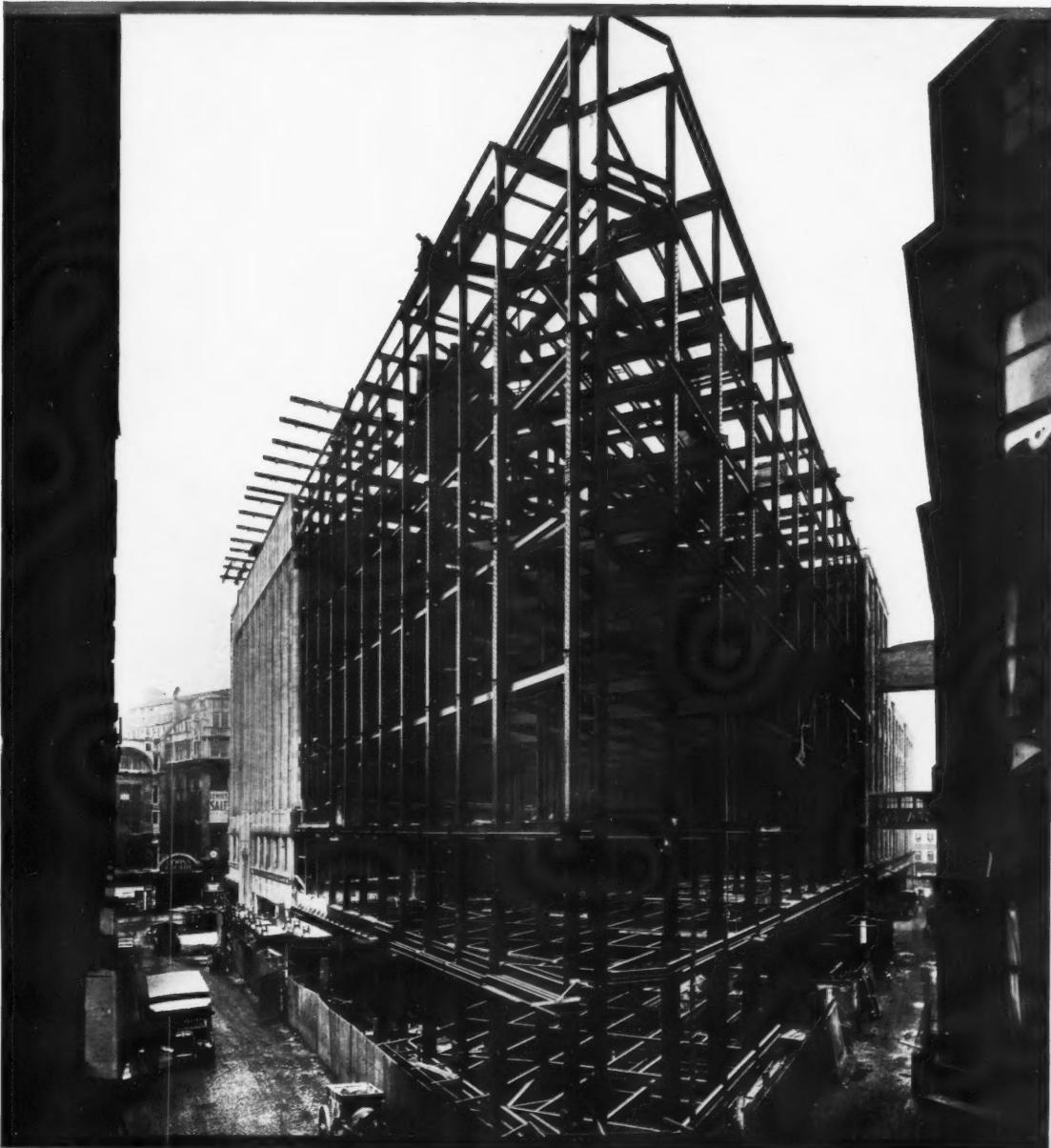
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THE ARCHITECTURAL REVIEW

A Magazine of Architecture & Decoration

Vol. LXXII, No. 433

December 1932

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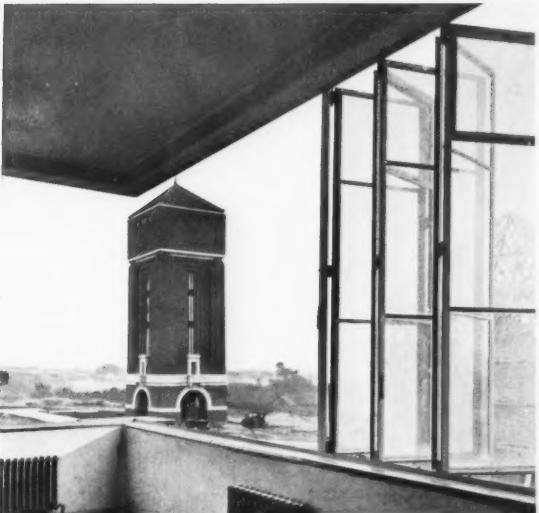
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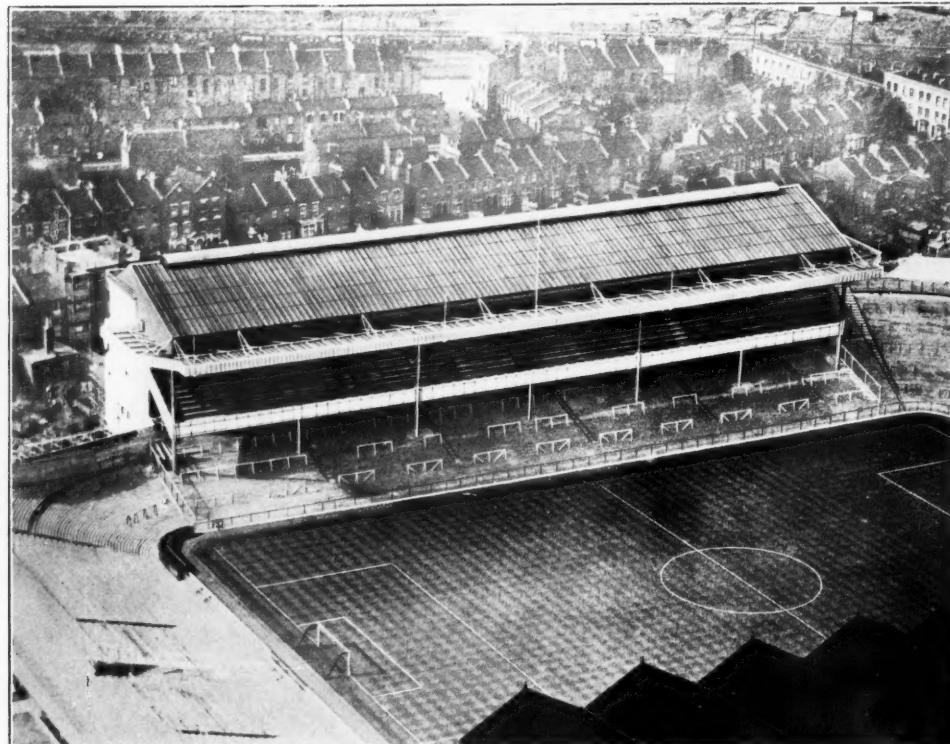
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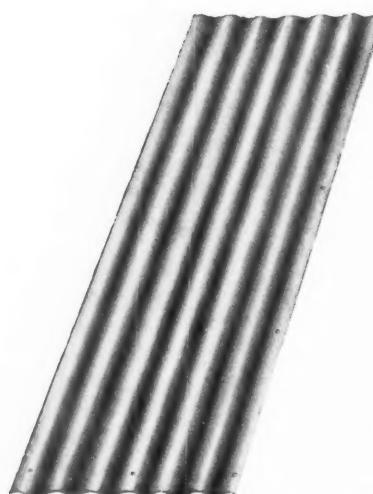
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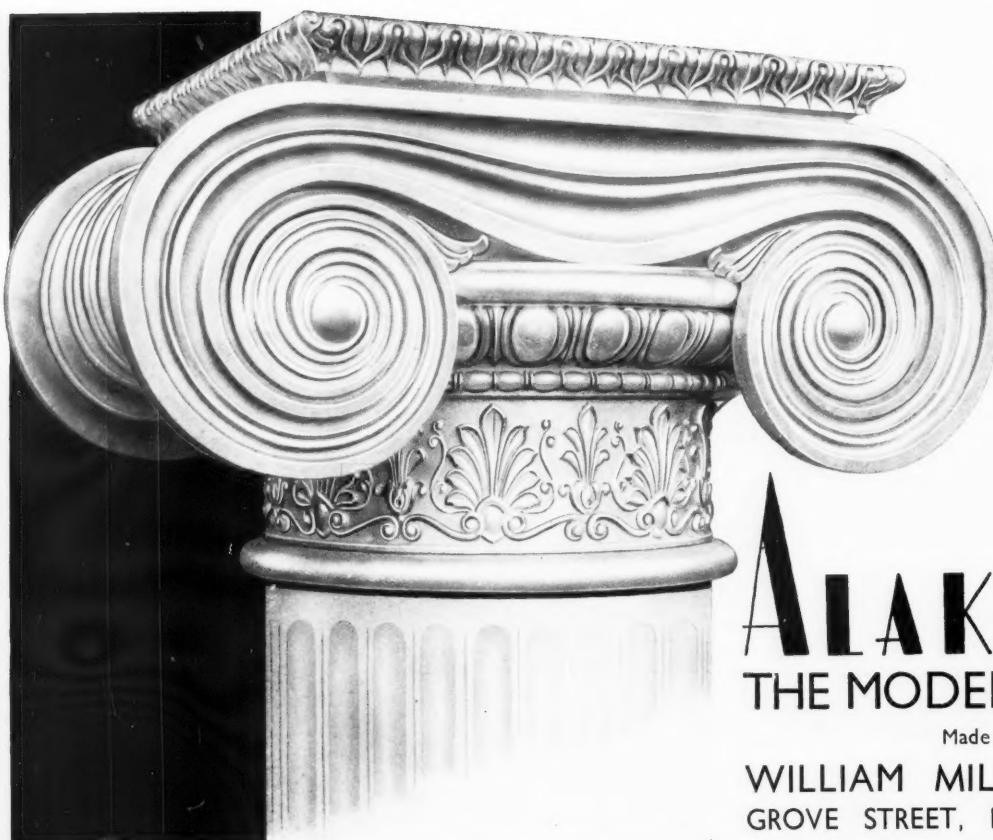
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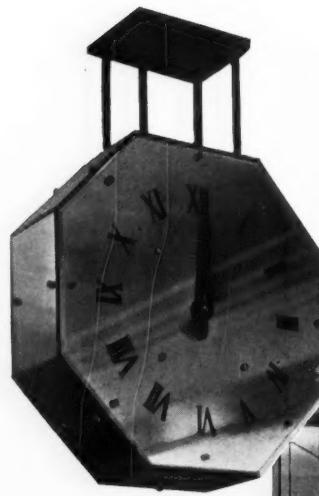


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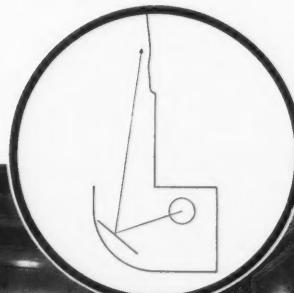
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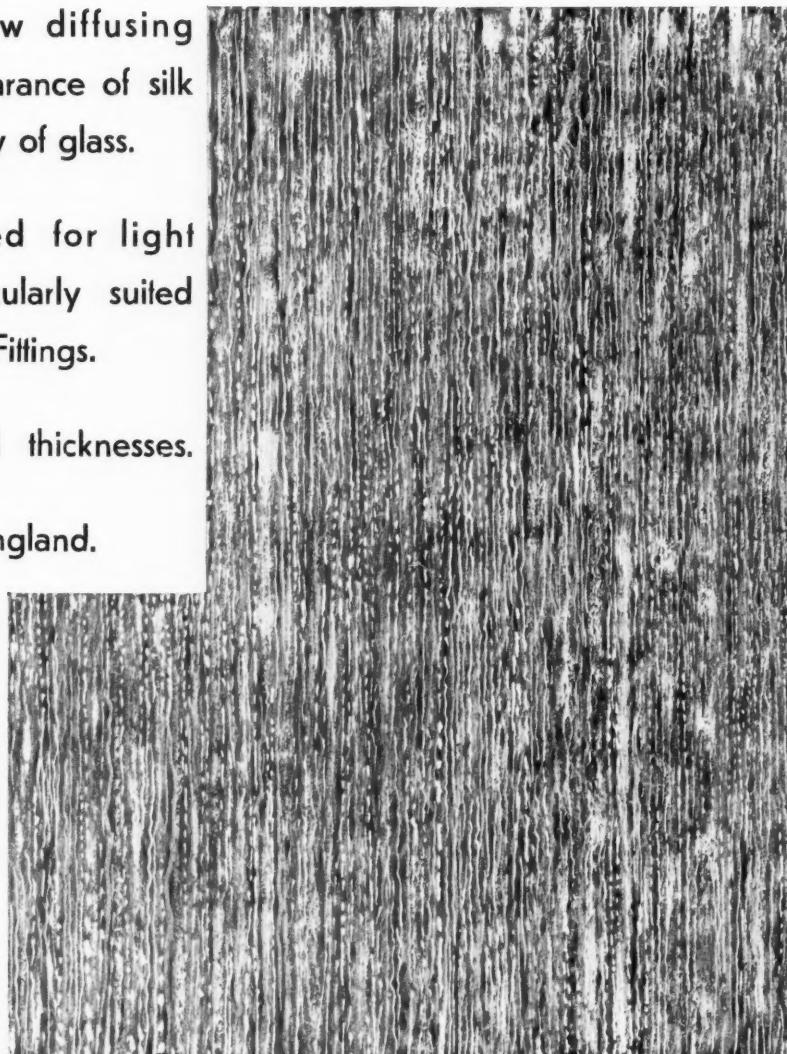
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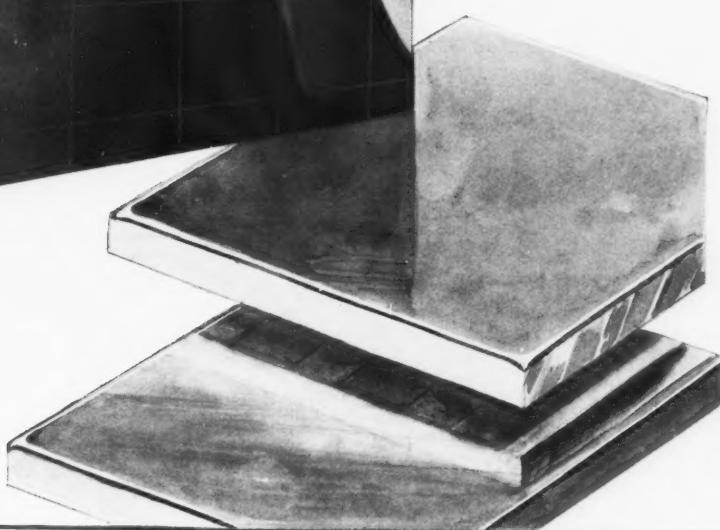
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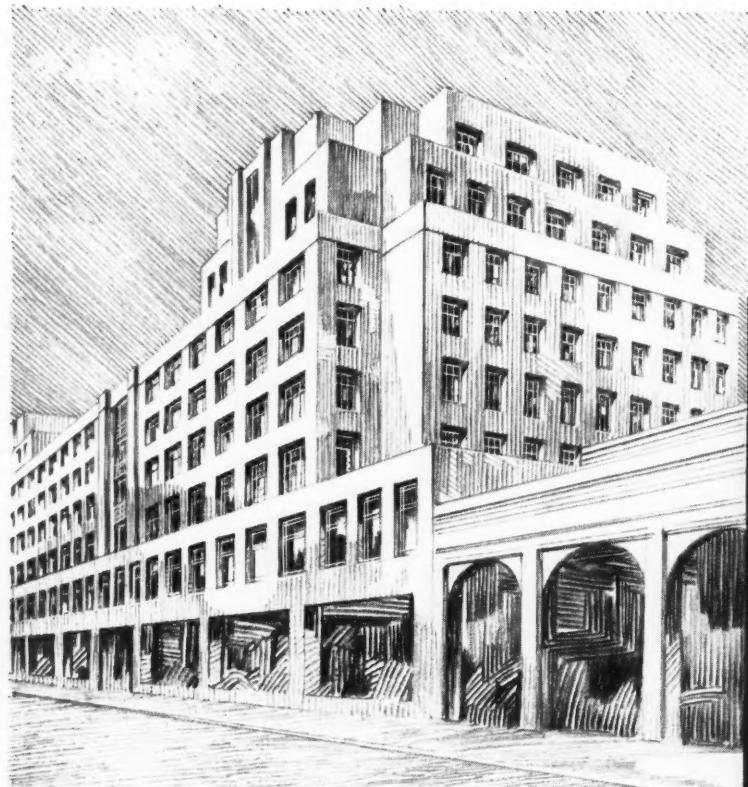


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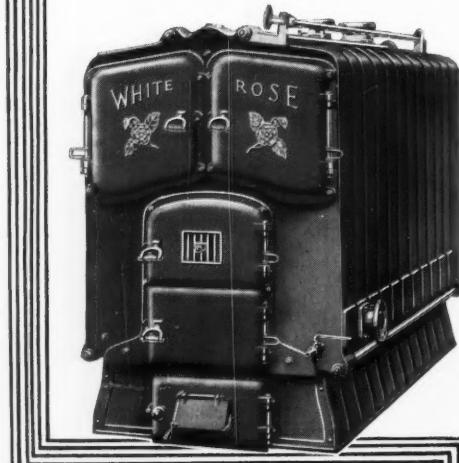
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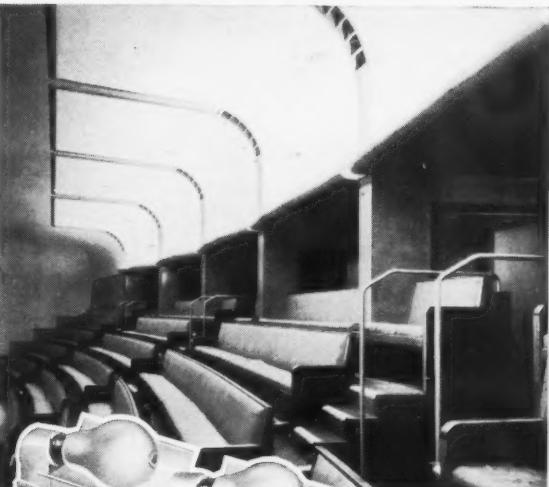


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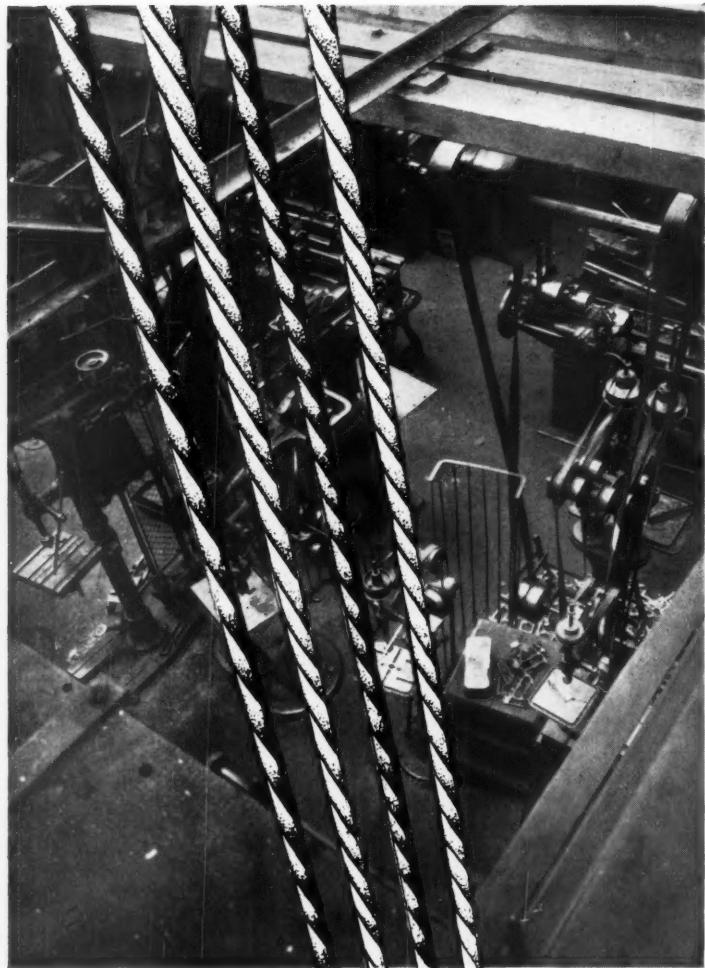
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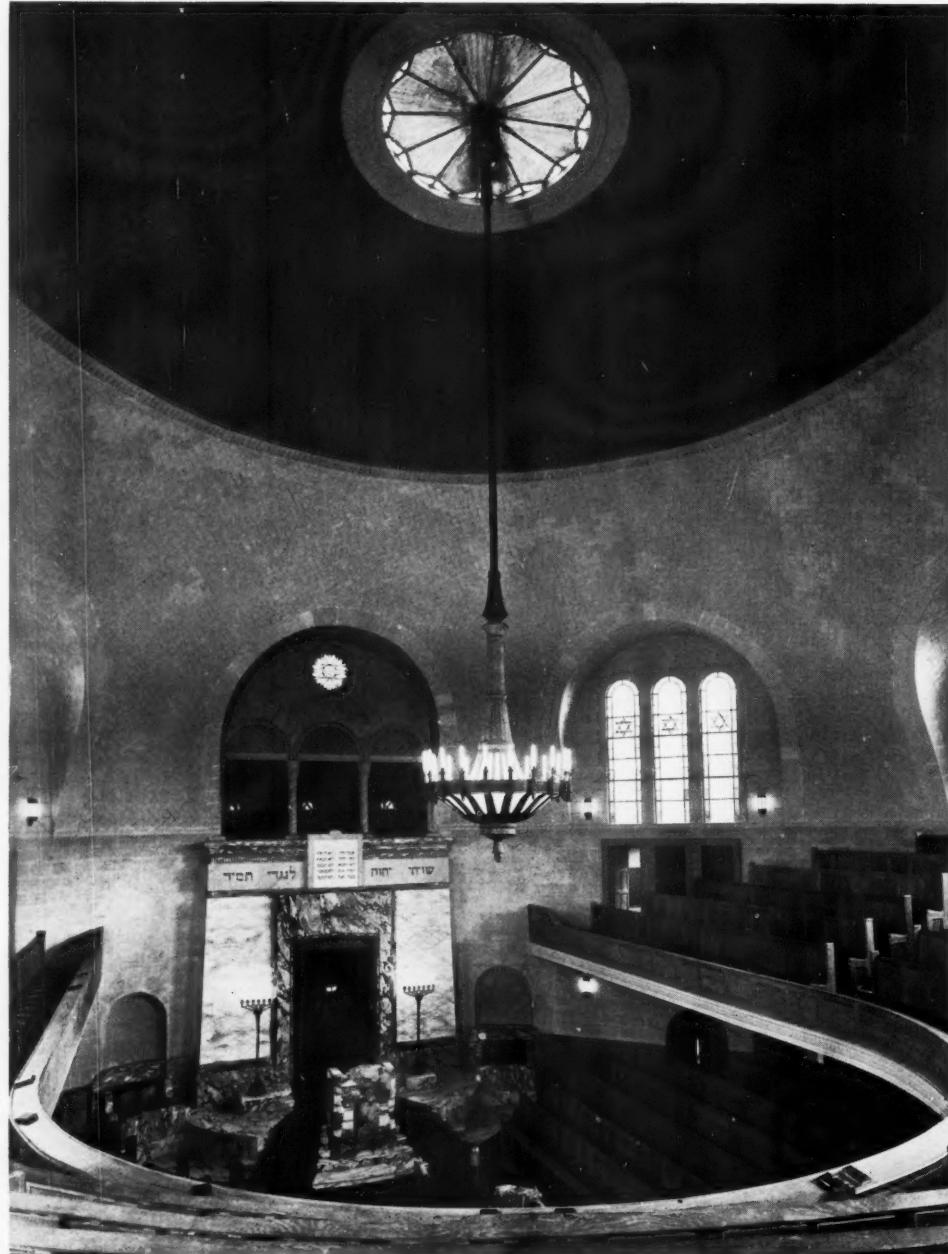
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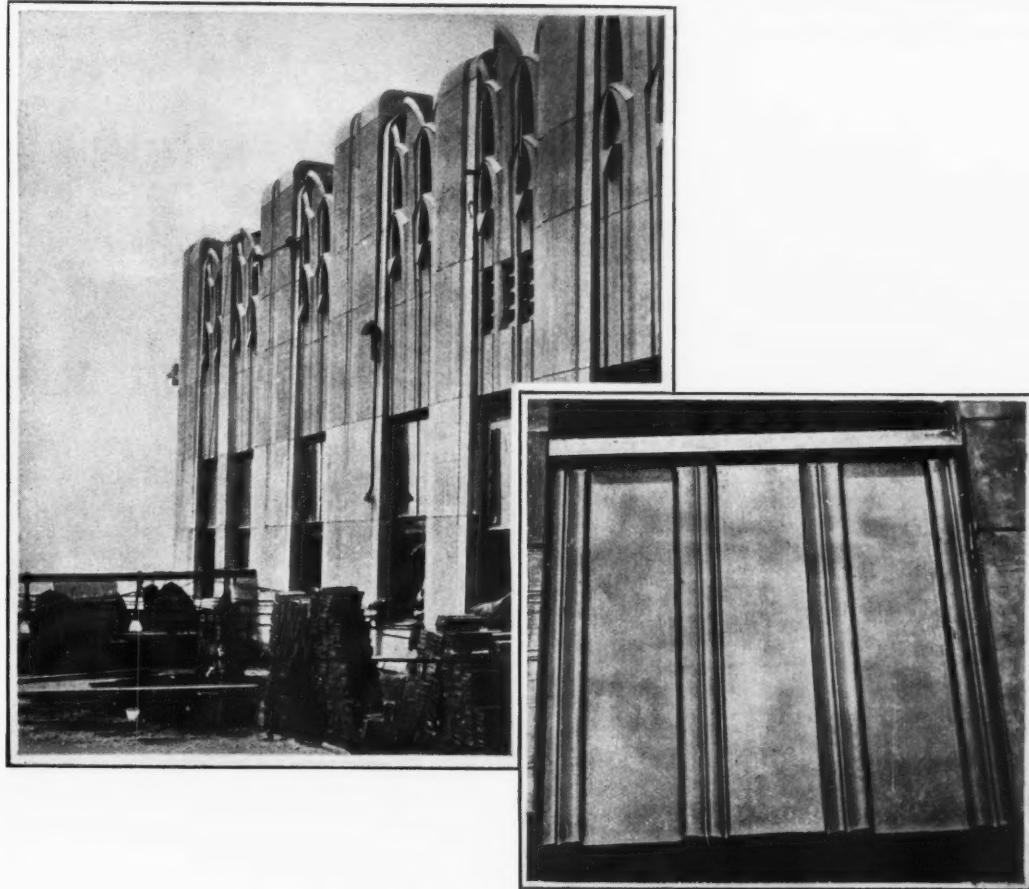
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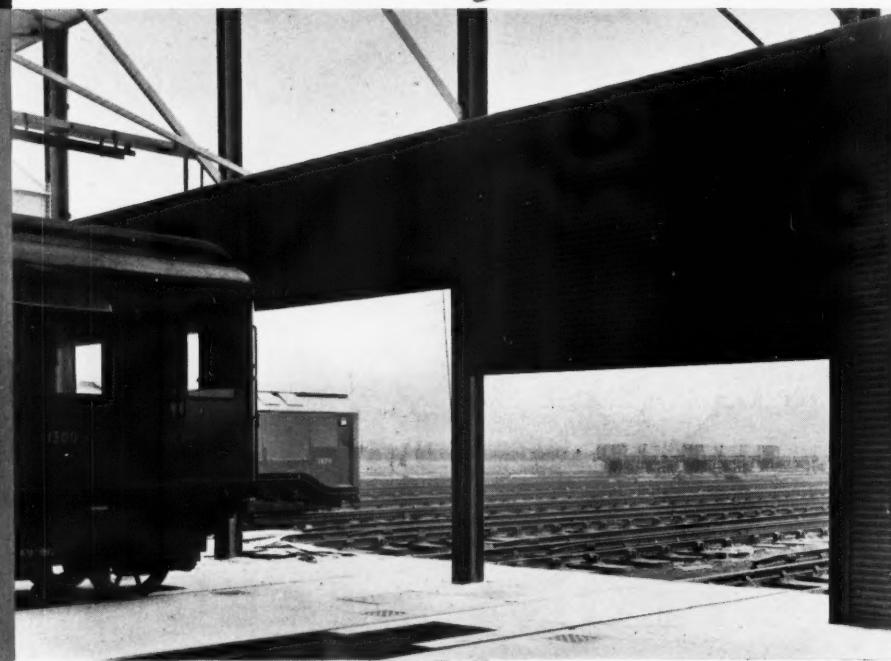
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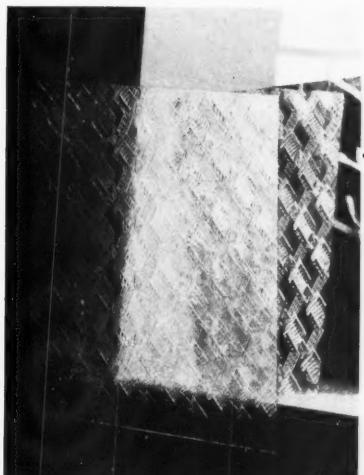
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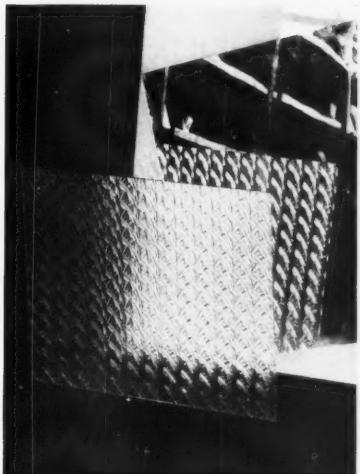
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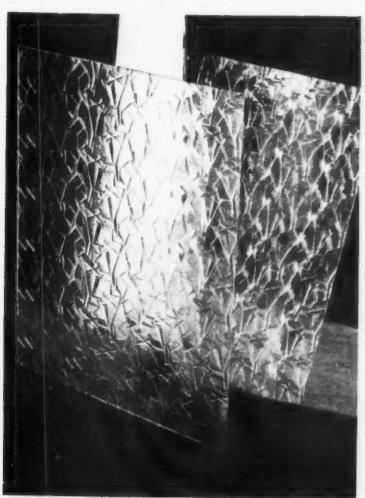
MP 64



"CRYPTIC": designed by John M. Holmes, A.R.C.A. [Registered Number 771236]



"CASCADE": designed by R. A. Duncan, A.R.I.B.A. [Registered Number 771237]



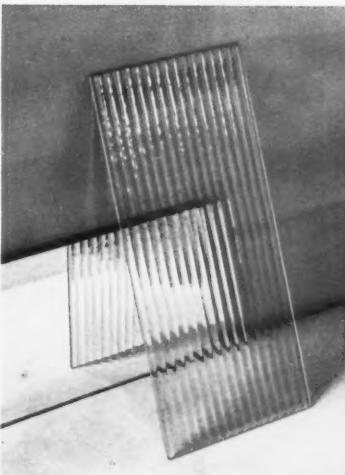
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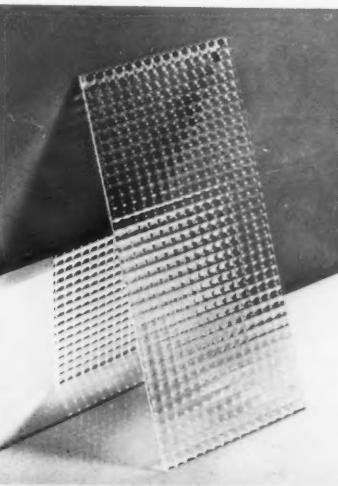
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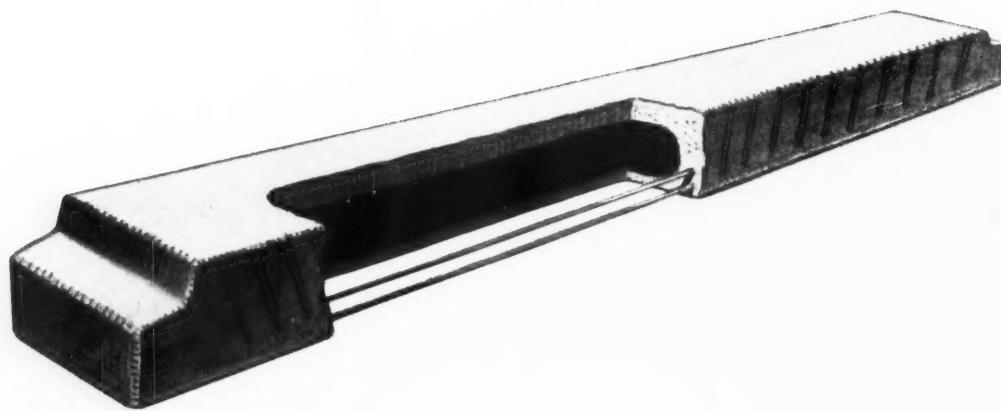
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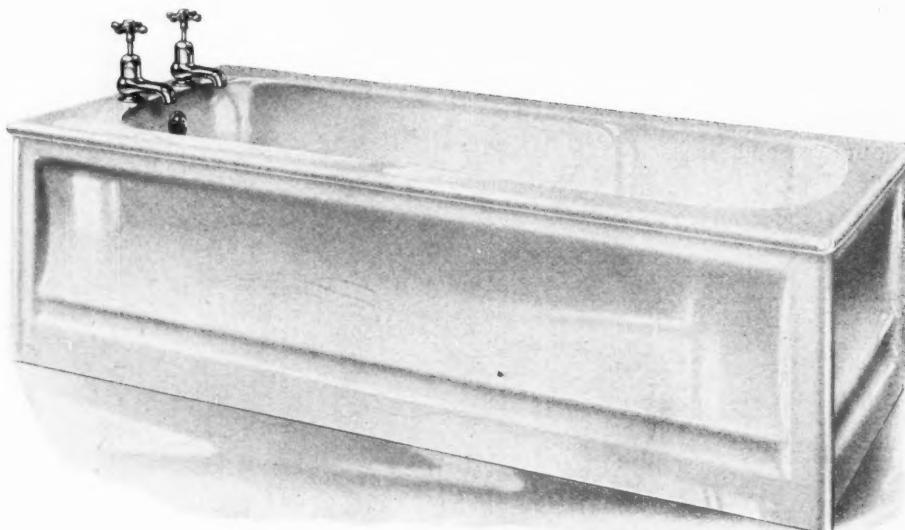
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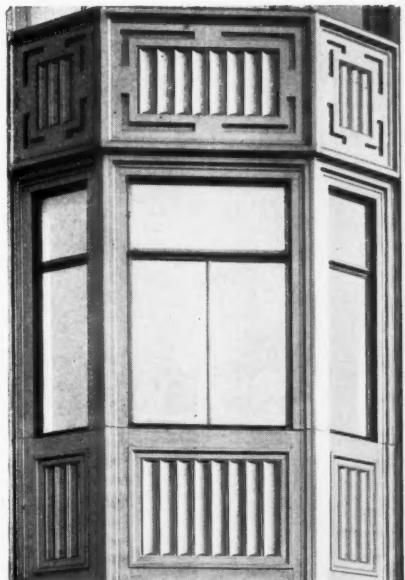
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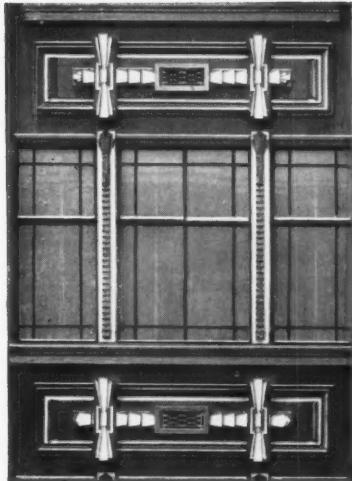
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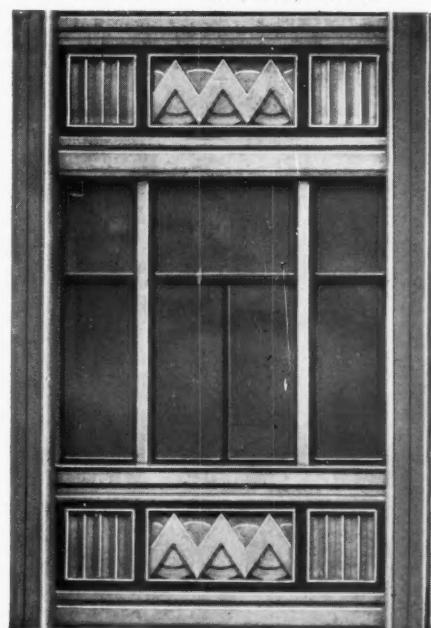
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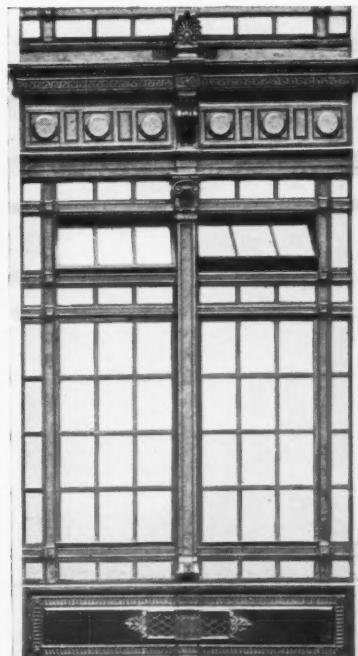
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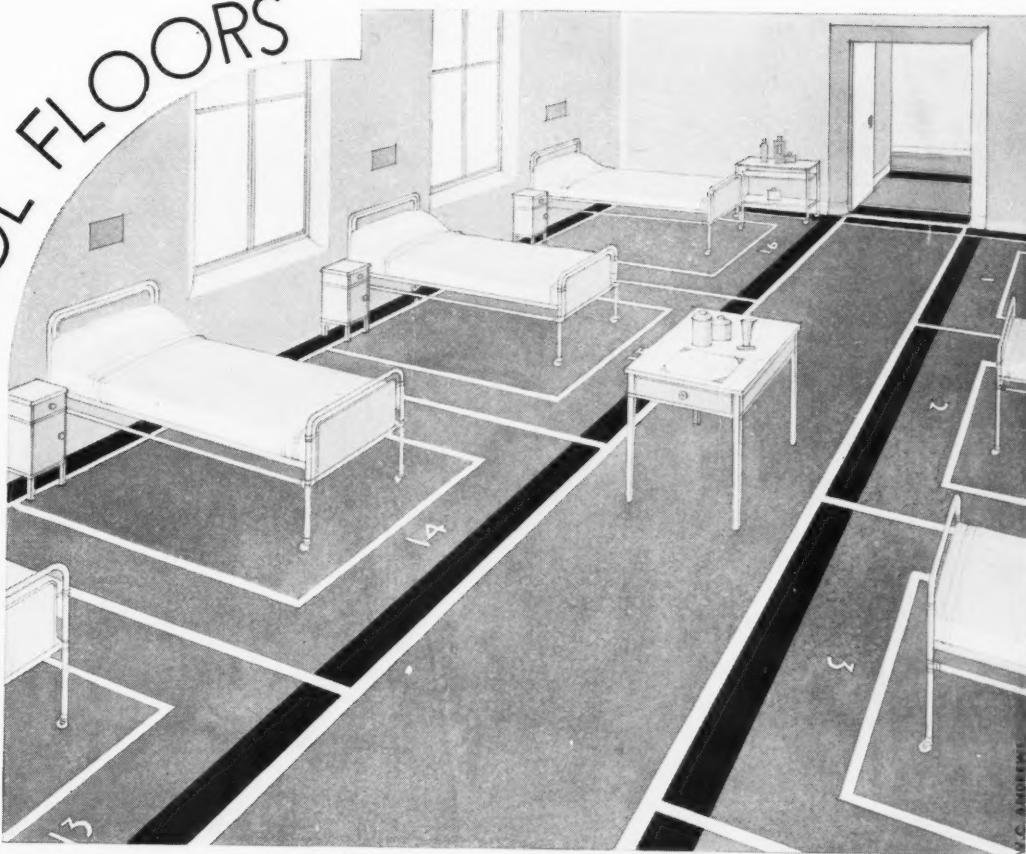
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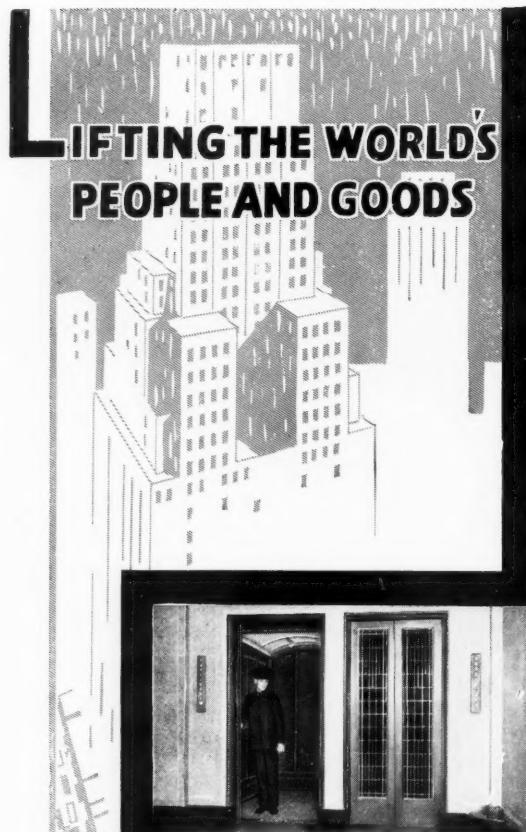


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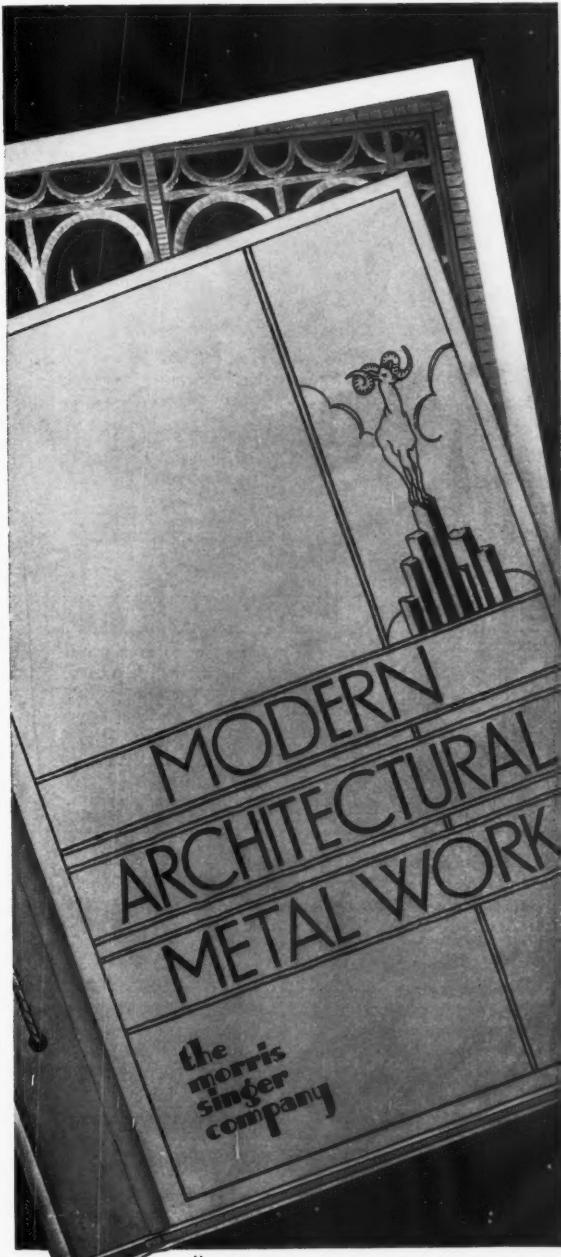
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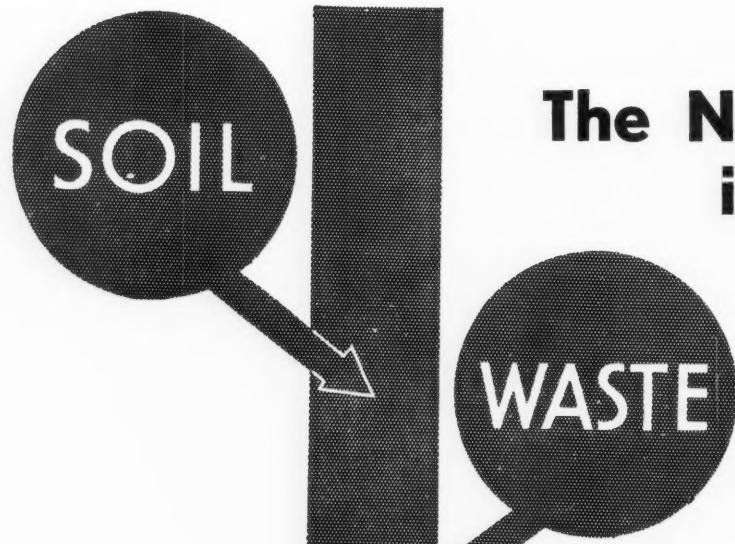
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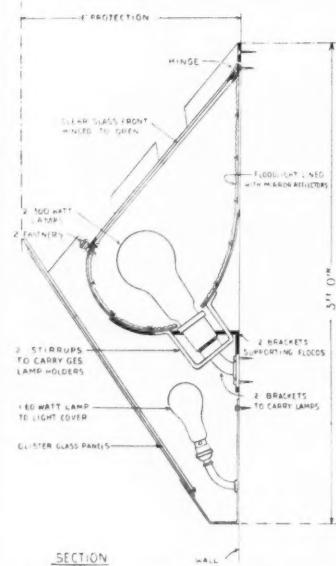
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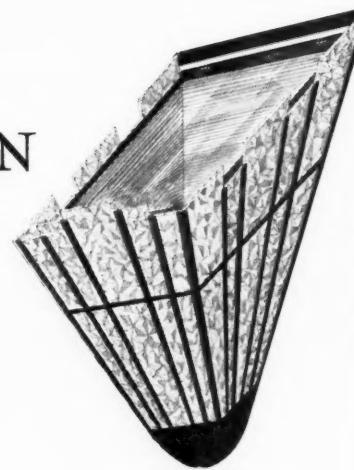
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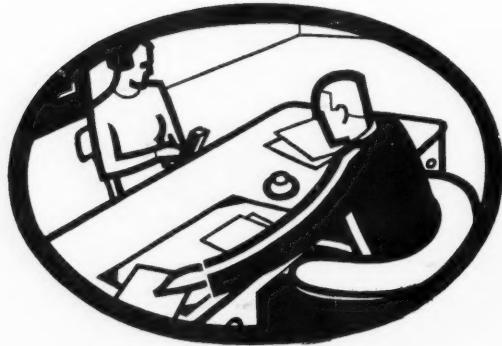
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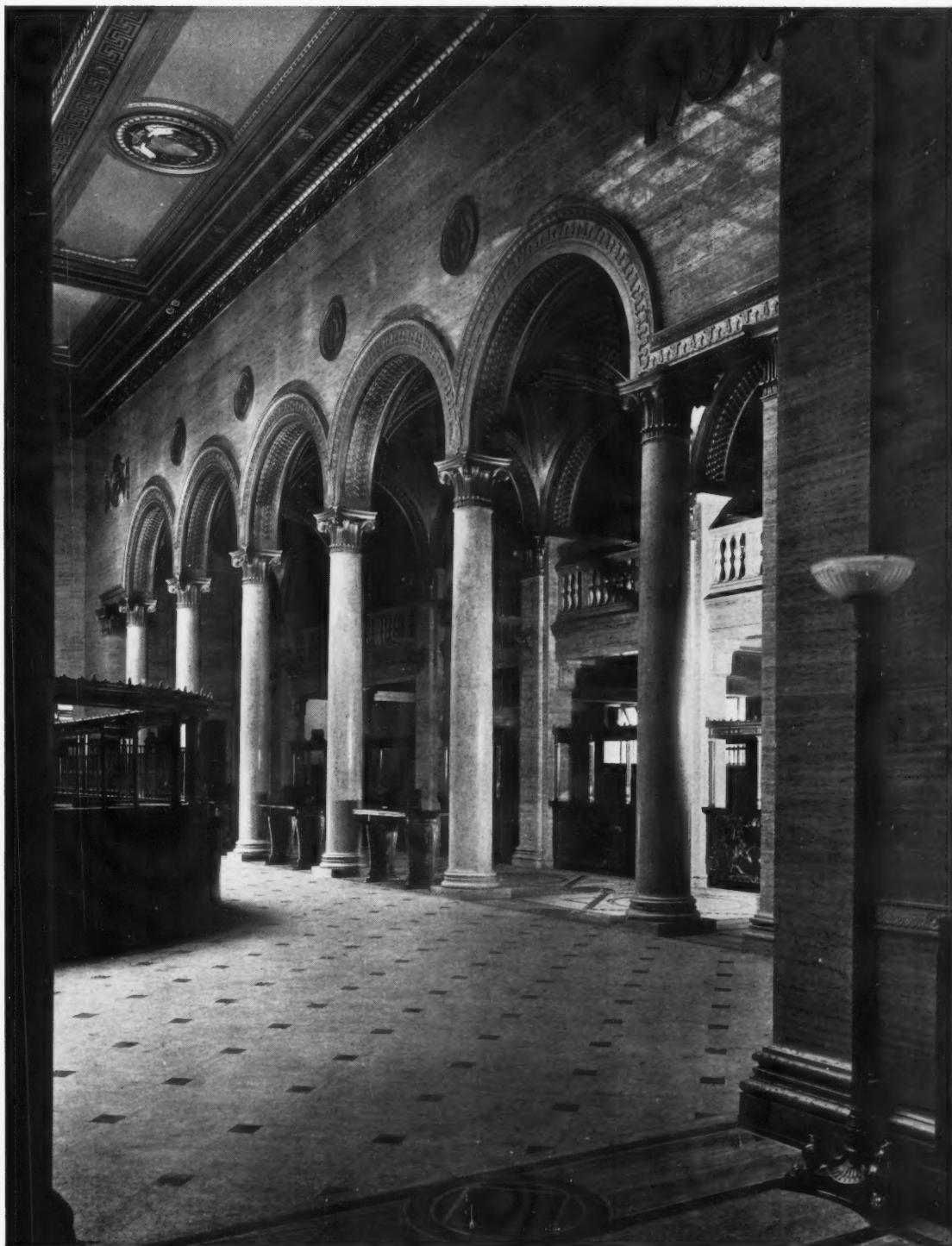
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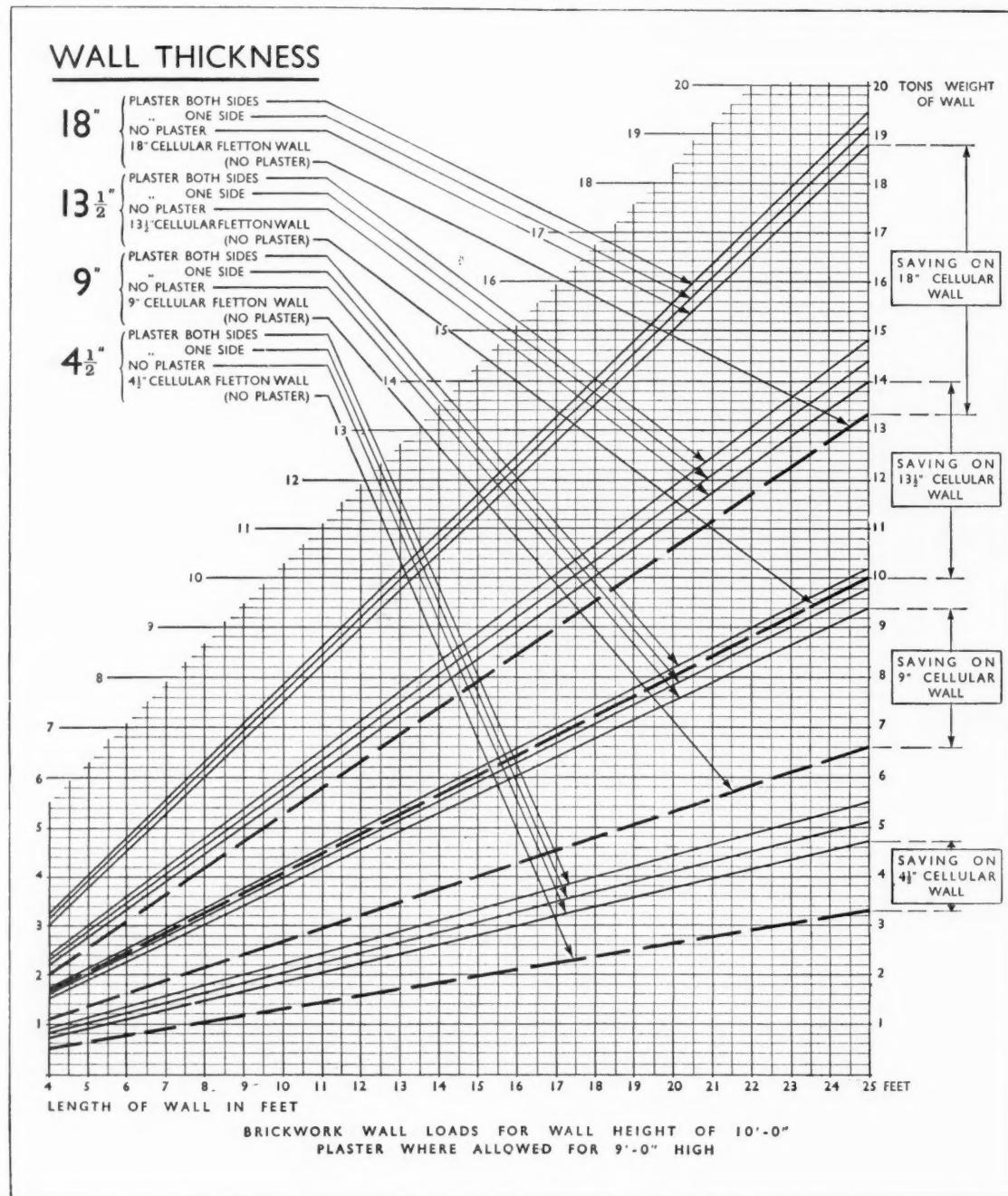


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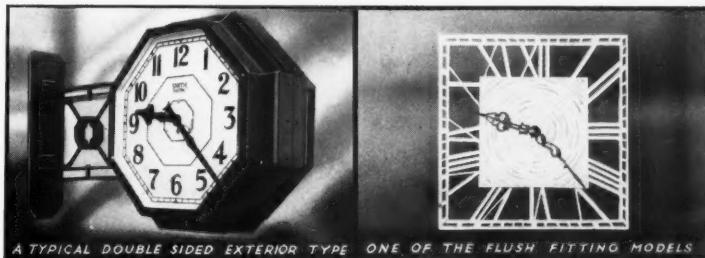
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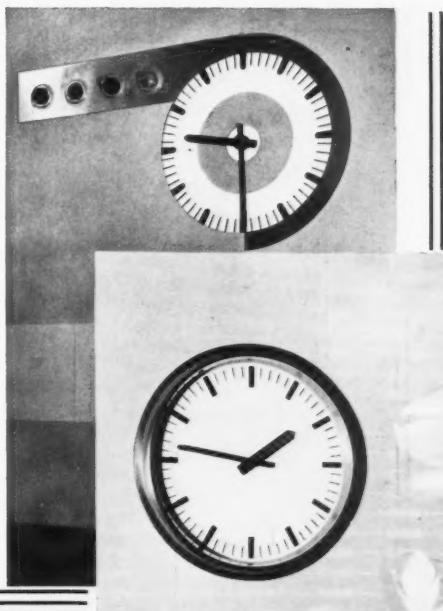
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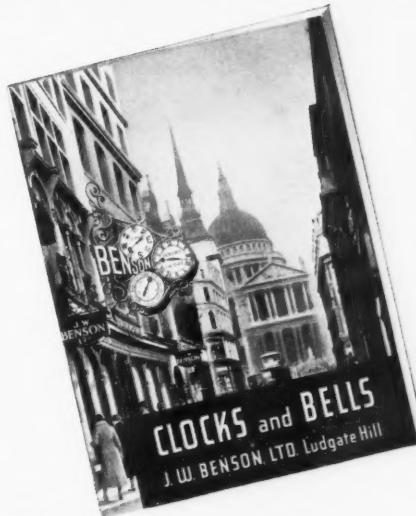
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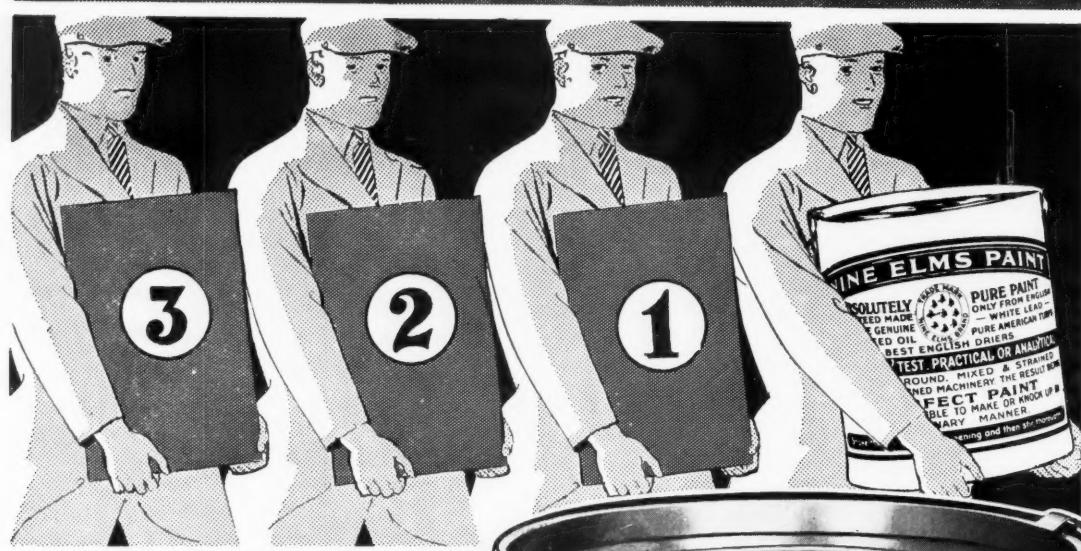
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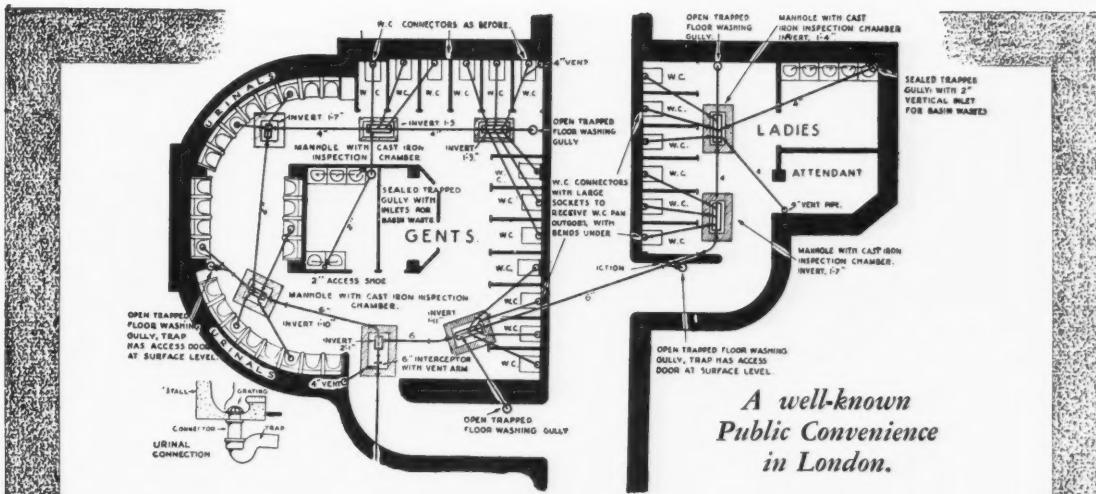
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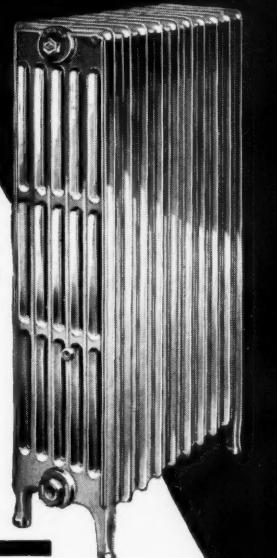
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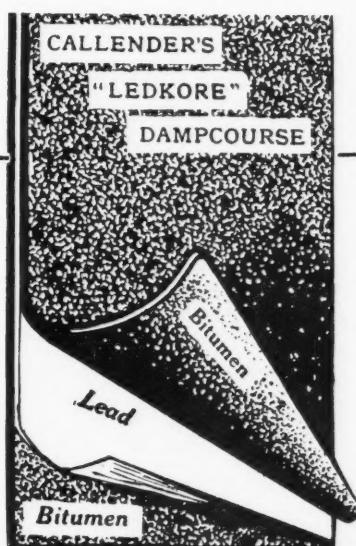
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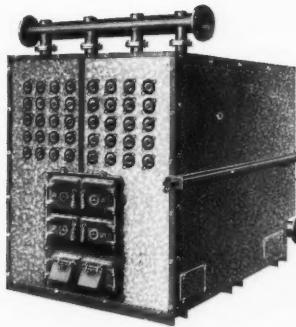
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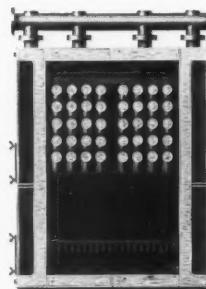
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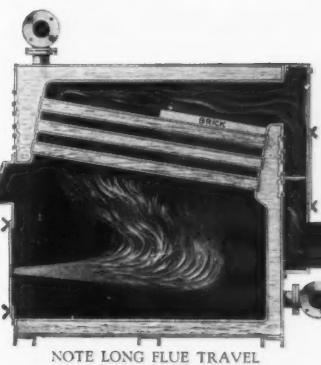


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